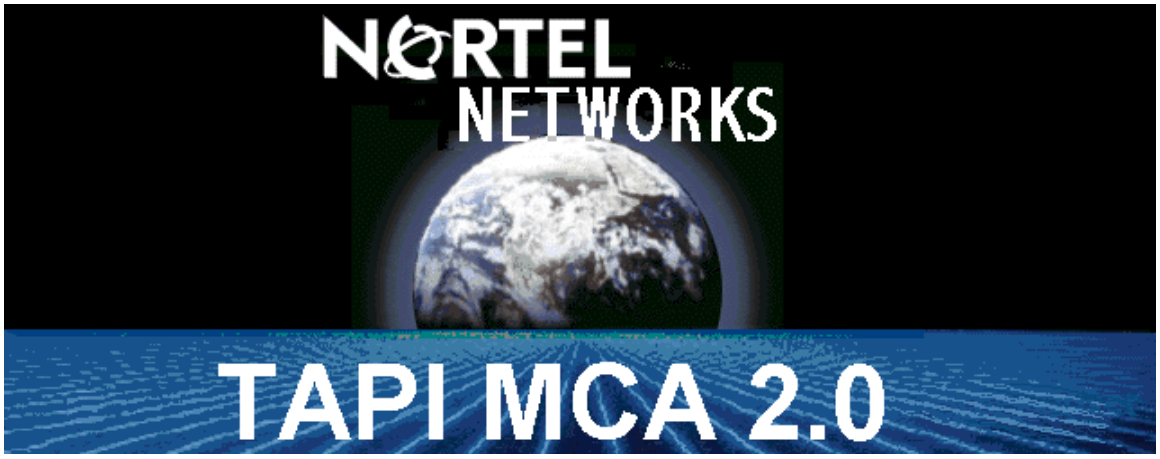

Reference Guide

for the
Installation and Configuration of the
Meridian Communications Adapter
and the
Symposium Desktop TAPI SP for MCA

NORTEL
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Symposium TAPI MCA 2.0 Reference Guide

A Guide for Installing and Configuring
the Meridian Communications Adapter and
the Symposium Desktop TAPI SP for MCA

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About this Guide

The *Symposium TAPI MCA 2.0 Reference Guide* provides detailed instructions on how to install and configure the Meridian Communications Adapter (MCA) and the Symposium Desktop TAPI Service Provider 2.0 for MCA (TAPI SP for MCA). Information in this document is intended for use by MCA users, telephony server administrators, and developers who are responsible for installing, configuring, maintaining and using the MCA with the TAPI SP for MCA. This document is written based upon the assumption that you have some experience working with computers, TAPI, telephony products, and Microsoft Windows. In this guide, the Meridian Communications Adapter is referred to as the MCA and the Nortel Symposium Desktop TAPI Service Provider 2.0 for MCA is referred to as the TAPI SP for MCA. When combined, these two are referred to as the Symposium TAPI MCA 2.0.

Note: The TAPI SP for MCA software contains a README.TXT file. This file provides information not available when this document was printed. Always read this information prior to beginning installation.

This guide is divided into the following chapters and appendices:

Chapter 1, “Overview,” provides a summary of the MCA, TAPI, and of the TAPI SP for MCA.

Chapter 2, “Installing and Configuring the MCA,” describes in detail how to complete the installation of the MCA.

Chapter 3, “Installing the TAPI SP for MCA,” provides information on installing the TAPI SP for MCA software .

Chapter 4, “Configuring the TAPI SP for MCA,” provides information on configuring the TAPI SP for MCA.

Chapter 5, “Getting Results using the TAPI MCA” describes how to become more efficient using the TAPI MCA product.

Chapter 6, “Troubleshooting Tips,” provides information for additional installation acceptance testing using the JulMar TAPI Phone Dialer tool and for running the Logger Tool. In addition, it also describes possible problems and the actions to resolve these problems.

The Appendices provide additional user information that may be helpful when installing and using the MCA and the TAPI SP for MCA.

Appendix C identifies the differences between the Desktop TAPI 1.6 and the TAPI SP for MCA. In addition, it lists the features, line functions, and display formats that the TAPI SP for MCA supports.

In addition, this guide contains a Glossary that lists telephony services terms and definitions used in this document. A Table of Contents and Index provide assist you in locating the desired information.

For additional information or help, call the Nortel Developer Support Hotline at (800) NT-4CTI-0. For information about other Nortel Networks products, call (800) 4-NORTEL (466-7835). Outside the United States and Canada, contact your Nortel Support or Sales representative.

Note: This document **can not** be ordered from Nortel Networks using the Publication number on the inside cover page. This document is only available online with the software.

Document Conventions

The following conventions are used in this document:

1. The individual keys that users are instructed to press appear inside angle brackets.
   For example: <Enter> or <F1>
2. "**Press**," "**Choose,**" or "**Click on**" means to position the cursor over an option, then press and release the left mouse button to activate control and carry out an action.
3. "**Select**" means to position the cursor over an option, then press and release the left mouse button to highlight the selection.
4. "**Double-click**" means to position the cursor over an option, then press and release the left mouse button twice.
5. Information that users are instructed to type appears in bold, italic print.
   For example: Type ***User Id*** or Enter ***User Id***
6. Menu commands and options that are displayed on the window appear in bold print, such as the **Exit** option located on the **File** menu on the Menu bar.
7. Window, screen, dialog box, or data entry field names display in italic print, such as, the *Open* field on the *Run* dialog box.
8. "**Button**" refers to a click or push button displayed on the window that is clicked on or pressed to carry out an action. **For example**: Click on the **OK** button or Click on 

9. **"Check box"** refers to a square box displayed on the window that is clicked on to select or to clear an option. **For example**: ☐ -- option not selected or ☒ -- option selected
10. **"Option button"** refers to a circle displayed on the window that is clicked on to select or to clear an option. **For example**: ○ -- option is not selected or ⓿ -- option is selected
11. ***Note:*** Identifies important User information and special instructions.

Note: Notes display in paragraphs separated from other text.

Related Documents

Documents that you may need to reference, but are not necessarily required for configuring or using the TAPI SP include:

- *MS-Windows User's Guide* - Available from Microsoft Corporation
- *MS-DOS User's Guide* - Available from Microsoft Corporation
- *Nortel Symposium Desktop TAPI Service Provider Implementation Planning Guide* - Available from Nortel - Available from the Nortel Web Site (www.nortel.com/bap/sales.htm) with the Nortel Symposium Desktop TAPI SP Developer Tool Kit.
- *Nortel Symposium Desktop TAPI Service Provider Programmer's Guide* - Available from the Nortel Web Site (www.nortel.com/bap/sales.htm) with the Nortel Symposium Desktop TAPI SP Developer Tool Kit.
- *Getting Started with Nortel Symposium Communicator* - Available with Nortel Symposium Communicator product.
- *Getting Started with Nortel Symposium Multimedia Conferencing* - Available with the Nortel Symposium Multimedia Conferencing product.
- *Getting started with Nortel Symposium Call Manager* - Available with the Nortel Symposium Call Manager product.

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Chapter 1 Overview

This chapter provides an overview of the Symposium TAPI MCA and contains information about Computer Telephony enablers and the Meridian Communications Adapter. Also included in an overview of Microsoft's Telephony Applications Programming Interface (TAPI).

Overview of the Symposium TAPI MCA

Nortel Networks is a leader in delivering solutions that meet customer needs. The Symposium TAPI MCA, Symposium Desktop TAPI Service Provider (SP) 2.0 user licenses, and Symposium TAPI Phone products below enable you to run TAPI compliant applications on your Desktop PC.

PEC	CPC	Description
NT5P70DA	B0252860	Symposium TAPI MCA 2.0
NT5P70DB	B0252886	Symposium TAPI MCA 2.0 Legacy (kit)
NT5P70CA	B0252859	Symposium Desktop TAPI Service Provider 2.0 - Single User License
NT5P70CB	B0252861	Symposium Desktop TAPI Service Provider 2.0 - 10 User License
NT5P70CC	B0252862	Symposium Desktop TAPI Service Provider 2.0 - 50 User License
NT5P70CD	B0252863	Symposium Desktop TAPI Service Provider 2.0 - 100 User License
NT5P70CE	B0252864	Symposium Desktop TAPI Service Provider 2.0 - 500 User License
NT5P50CA	B0252883	Symposium TAPI Phone (M2216ACD) (kit)
NT5P50CB	B0252884	Symposium TAPI Phone (M2616) (kit)
NT5P50CC	B0252885	Symposium TAPI Phone (M2008)

For example; users who already have a Meridian Modular Telephone equipped with an MCA simply need to install the Symposium Desktop TAPI Service Provider software using any one of the user license packages above. The software is provided on a CD-ROM containing two versions; 1.6 and 2.0. You must choose which version to install, based on the following information:

- Version 1.6 of the TAPI SP operates on Windows 3.1/3.11/WFW & Win 95 PC’s equipped with Microsoft TAPI 1.3/1.4.
- Version 2.0 of the TAPI SP for MCA operates on Windows NT 4.0, Windows 2000, Windows 98 and Windows 95 PC's equipped with Microsoft TAPI 2.0/2.1.

Users who have only a Meridian Modular Telephone must install one of the Symposium TAPI MCA packages above, which consists of an MCA, the TAPI SP for MCA 2.0 software and an RS-232 cable.

Users who do not have a Meridian Modular Telephone can install one of three types of Symposium TAPI Phone packages; a black M2008, M2216 or M2616 packaged with the TAPI MCA items listed above.

There are a variety of applications available such as Symposium Call Manager and Microsoft's Outlook 97 that offer Computer Telephony Integration (CTI) solutions. Refer to Chapter 5 Getting Results for more information on TAPI Compliant Applications.

Overview of the Computer Telephony (CT) Enablers

A Computer Telephony Enabler is a combined hardware/software solution that can be added to your PC that allows your PC applications to monitor or control a telephone in some way. In a sense, the CT Enabler integrates your PC and telephone; allowing you to manage calls more effectively using your PC application. The Symposium TAPI MCA is only one of the Computer Telephony (CT) Enablers that Nortel provides. The table below shows some other Computer Telephony Enablers.

CT Enabler	**First Party or Third Party**	**Switch**	**Hardware**	**Microsoft Software**	**Nortel Networks Software**
Symposium TAPI MCA	First Party	Meridian 1	MCA	Microsoft TAPI 2.1 on Desktop PC	TAPI Service Provider for MCA 2.0
Symposium Communicator 2.0	First Party	Meridian 1 or MSL-100	Communicator Card	Microsoft TAPI 1.3/1.4 on Desktop PC	Symposium Desktop TAPI Service Provider 1.6
Symposium TAPI Service Provider for Meridian 1	Third Party	Meridian 1	Meridian Link, Direct Connect (AML/ELAN) or SCCS Link	Client PC: Microsoft TAPI 2.1	Win NT 4.0 Server: Symposium TAPI SP for M1 Release 2
CompuCALL TAPI Driver R1	Third Party	DMS-100 or MSL-100	CompuCALL	Client PC: Microsoft TAPI 2.1	Win NT 4.0 Server: CompuCALL TAPI Driver R1

For third party call control, Nortel offers the Symposium TAPI Service Provider for Meridian 1 Release 2 and the CompuCall TAPI Driver. For information about these and other Nortel Networks products, call (800) 4-NORTEL (466-7835). Outside the United States and Canada, contact your Nortel Support or Sales representative.

Meridian Communications Adapter

The Meridian Communications Adapter (MCA) is an asynchronous/synchronous data card that fits into the base of Meridian Modular Telephones. Attached to the MCA via its RS-232 serial port is your personal computer as shown below. The personal computer needs some special communications software written specifically for it in order to access its serial port and communicate with the MCA.

The Meridian Communications Adapter (MCA) is capable of operating in two modes; Data Mode or Call Control Mode. The default mode is data mode and it is sometimes used with data/internet access applications such as Procomm, Crosstalk, Netscape or Internet Explorer to communicate with other data service providers. Refer to Appendix "B" for information on how to use the MCA in data mode.

This document focuses on the use of the MCA in “Call Control” mode only which is the mode that is always used when the MCA is part of a CT Enabler; supporting TAPI Applications via the TAPI SP for MCA 2.0. When a TAPI application is started on your PC, it sends an Initialize command to Microsoft's Telephony API (TAPI) which in turn sends a command to the TAPI SP for MCA. The TAPI SP for MCA receives the command from TAPI and tells the MCA to enter “Call Control” mode. The application can then invoke its call control features to place and answer calls, put calls on hold, transfer and conference calls and release calls. The TAPI SP for MCA interprets these requests and works with the MCA and the switch to process them. When the TAPI Application quits, the MCA is returned to Data Mode.

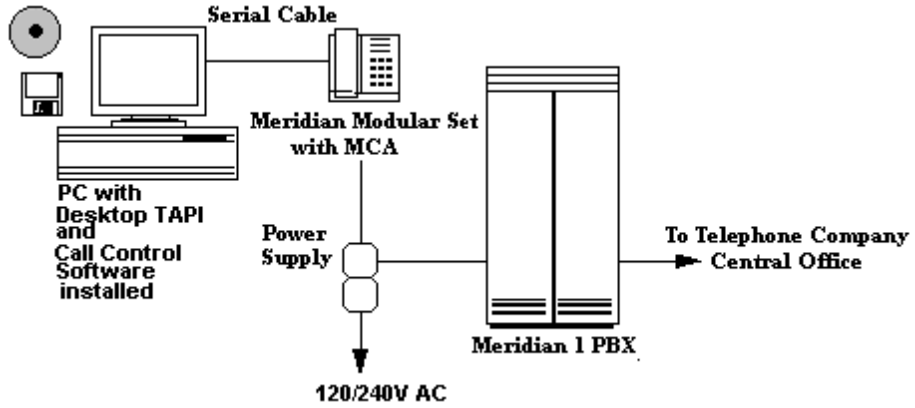


Figure 1 Meridian Communications Adapter with the Meridian 1 PBX

The newer version of the MCA (NT2K69AA) eliminates the requirement for the Power Board Option (NT2K10WD) to power the MCA on the Meridian (Modular) Digital telephone. This reduces installation time by eliminating the need to open the telephone to install the Power Board Option.

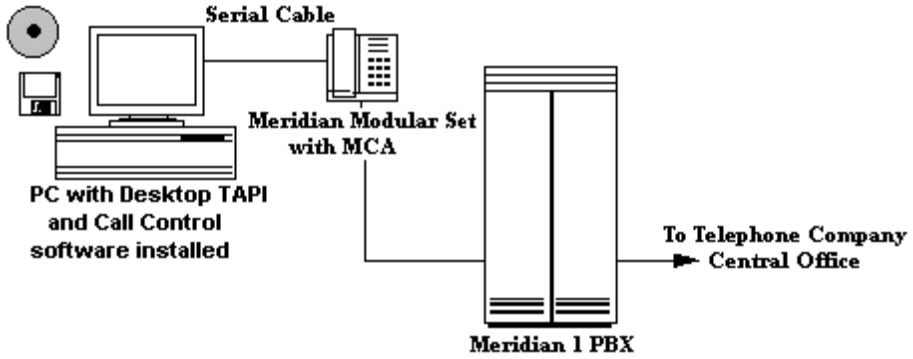


Figure 2 Meridian Communications Adapter without external power

With XII release 18 and later, the MCA can be programmed with telephone keypad commands, and service change prompts (LD 11). X11 releases 14 through 17 support keypad programming only.

Just as your phone has a unique Directory Number (extension), the MCA must have its own data Directory Number configured in the system if used in Data Mode. A data directory number IS NOT needed for the MCA when operating in Call Control mode and supporting TAPI Applications.

The MCA uses EEPROM non-volatile read/write memory for permanent storage of settings and configuration parameters.

Overview of TAPI

The introduction of new computer telephony integration (CTI) standards allows businesses of all sizes to develop new applications integrating computers and telephone systems. Microsoft and Intel created Telephony Application Programming Interface (TAPI). The Telephony technology integrates computers with the telephone network.

Nortel offers TAPI compliant applications as well as Service Providers. Service Providers (SP) are the software files needed to enable TAPI applications to communicate with the physical telephony device. Nortel offers TAPI SPs for Meridian 1, Norstar, MSL-100, DMS Meridian Digital Centrex business systems.

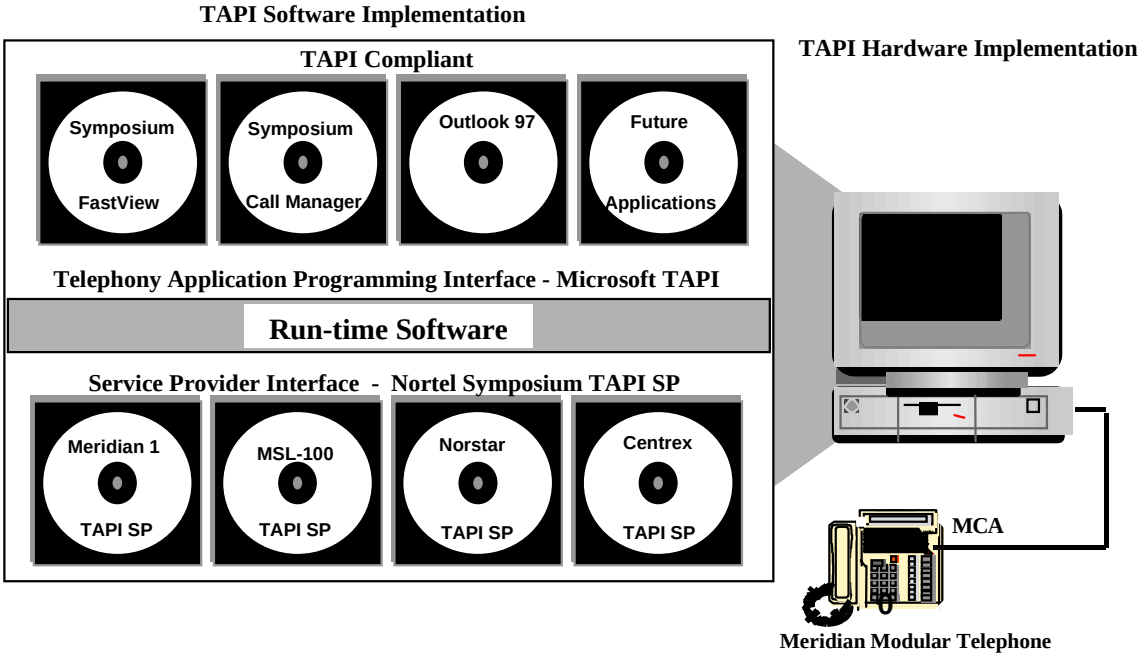


Figure 3 TAPI Overview

Microsoft's Operating System and TAPI software have evolved over the years and understanding which releases are compatible with Nortel Network's Desktop TAPI Service Providers is important. Refer to the Table below.

Microsoft TAPI Release	Desktop TAPI SP Release	Win 3.1	Win 3.11	Windows for Workgroups	Win 95	Win 98	Win NT 4.0	Win 2000
1.3	1.5/1.6	Y	Y	Y				
1.4	1.5/1.6	N	N	N	Y			
2.0	2.0				Y	Y	Y	Y
2.1	2.0				Y	Y	Y	Y
3.0	2.0				Y	Y	Y	Y

The Nortel Symposium Desktop TAPI service providers, available as standalone development kits, are capable of being included in a variety of applications. The Telephony Application Programming Interface (TAPI) gives developers a consistent set of tools for creating the windows-based telephony applications.

Overview of the TAPI SP for MCA 2.0

The Nortel Symposium Desktop Telephony Application Programming Interface (TAPI) Service Provider (SP) release 2.0 for MCA is also referred to as the TAPI SP for MCA in this document. Version 2.0 provides 32-bit functionality.

The TAPI SP for MCA provides the JulMar TAPI Phone Dialer tool and the TAPI Logger tool to help with troubleshooting. The JulMar TAPI Phone Dialer tool is provided to assist you in verifying that TAPI SP for MCA is working after it is installed and configured. The Logger tool allows you to create a log file that provides information to assist technical personnel in troubleshooting problems. These tools are detailed in Chapter 6.

TAPI Application Relationships

Figure 4 TAPI Application Relationships shows the relationship between Microsoft TAPI, Nortel TAPI SPs, and TAPI applications. Version 2.0 of the TAPI SP for MCA does not support MBS sets as illustrated below but version 1.6 does and it is available on the version 2.0 CD-ROM.

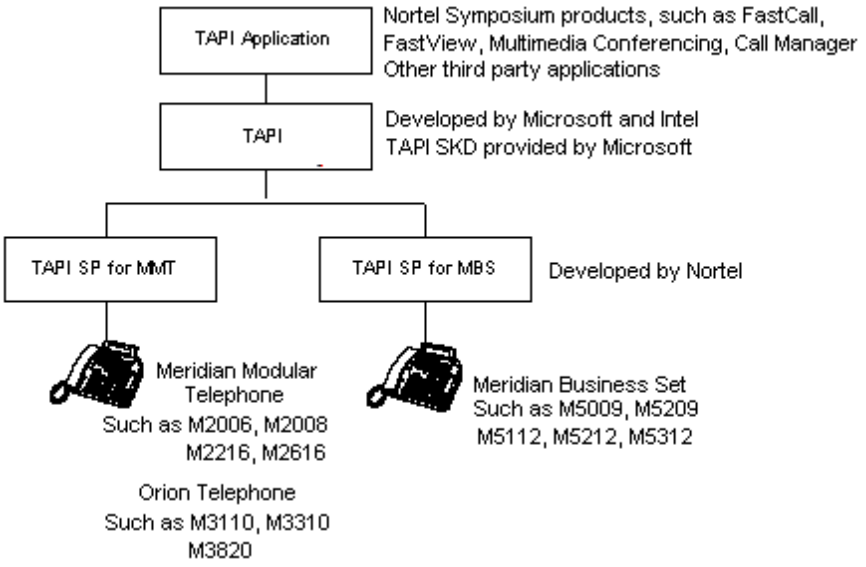


Figure 4 TAPI Application Relationships

Implementation Planning Process

The process of implementation planning starts by determining what you want to do and how your TAPI application will help you do it. You need to determine how the TAPI application can take advantage of the information presented to the set. Keep in mind that most applications that are compatible with Microsoft windows support the output of information to a printer and the input of data through a modem, scanner or mouse. This information exchange is usually handled or controlled by a special driver that typically manipulates the data in some way.

TAPI applications rely on the TAPI SP for MCA to manipulate the exchange of information between the personal computer's COMM 1, COMM 2, COMM 3, or COMM 4 port and a telephone using an MCA.

Call Presentation

TAPI compliant applications usually support the ability to place calls, answer calls, hold and un-hold calls, transfer and conference calls, as well as other features. However, one of the most important functions of the TAPI Service Provider is to interpret the information that is presented to the telephone set and pass that information on to the TAPI compliant application through an interface device. This is called "Call Presentation."

Symposium TAPI MCA 2.0 interprets only information presented to the bottom line of the phone set's display. DNIS, which appears on the top line, is not captured or interpreted. Calling ID and Called ID information delivered to the TAPI application follows these supported formats. Refer to the "Supported Display Formats" section located in Appendix C for the supported formats.

Many TAPI compliant applications, such as Nortel Symposium FastView and Nortel Symposium Call Manager use the information to perform a particular function. This function may include call routing or screen pops. In addition, we recommend that you check with your telephone system administrator to determine which functions are available at your location.

Chapter 2 Installing and Configuring the MCA

This chapter provides instructions and information for installing and configuring the Meridian Communications Adapter (MCA). Appendix B provides additional information on using the MCA.

Requirements for Installing the MCA

The Meridian Communications Adapter (MCA) must be installed, configured, and working before installing the TAPI SP for MCA software. The MCA resides in the digital telephone foot stand. The MCA allows personal computers to connect to the Meridian Modular Telephone, using an RS-232C interface on a DB-25 connector.

If you currently have a working MCA, you will have to install the new foot stand only.

Telephone Compatibility

The MCA is forward and backward compatible with the following Meridian Modular Telephones:

- M2006
- M2008
- M2008HF
- M2616
- M2216ACD

The MCA has the following exclusions:

- Due to UL and CSA considerations, digital telephones equipped with an MCA cannot be wall mounted.
- Foot stands supporting the use of an ATA and Key Expansion Modules, NT2K22, for the M2616 and M2216ACD telephones are not available.
- The NT2K69AA version of MCA cannot be used on Meridian Digital Telephones where the NT2K10xx Power Board is required.
- For safety reasons, Meridian Digital Telephones that have been previously wall mounted, require replacement of the foot stand with the bottom knock-out still intact.

Note: The wall mount knockout located on the bottom of the telephone foot stand must be in place. If the knockout is damaged or missing, you must replace the foot stand with a new one before installing the MCA.

Meridian 1 PBX Requirements

Meridian 1 PBX	Requirement
Meridian 1 Software Release Requirements	The software release required: • for Meridian SL-1 -- X11 Release 14 or greater • for Meridian 1 Option 11 -- X11 Release 16 or greater • for Meridian 1 Option 21-81 -- X11 Release 15 or greater
Meridian 1 Feature Requirements	CPND, ADD, CNDA, DNDA
Digital Line Card Requirements	The MCA can be equipped on Meridian Digital Telephones on the following equipment: • Enhanced Peripheral Equipment (EPE) with QPC578 line card • Intelligent Peripheral Equipment (IPE) with the NT8D02 line card.
Telephone Requirements	M2006, M2008, M2008HF, M2216ACD, M2616, M3110, M3310, M3820

MCA Hardware Requirements

The following table describes the hardware requirements for the various MCA models.

Table 1 MCA Hardware Requirements

Required MCA Hardware	NT9K	NT2K Later than April 1998	NT2K Prior to April 1998	NTZK
MCA printed circuit board	✓	✓	✓	✓
24V AC power adapter	✓	✓	✓	✓
Jumper board	Pre-installed	Pre-installed	✓	✓
Redesigned foot stand	Pre-installed	Pre-installed	✓	✓

Digital Line Cards

The MCA can be equipped on Meridian Digital Telephones on the following equipment:

- Enhanced Peripheral Equipment (EPE) with QPC578 line card
- Intelligent Peripheral Equipment (IPS) with the NT8D02 line card.

Power

The MCA requires the use of the new ATA/MCA Transformer (A0688664) for external, local power.

Note: The NT2K69AA version of MCA cannot be supported with closet power sources such as Schumway.

Meridian 1 Software

The MCA requires X11 Release 14 or higher software for Meridian 1 Option 11 through 81C. See the Meridian 1 System Administrator for additional details.

Telephone Foot stand

Meridian Digital Telephones manufactured after February 6, 1998 are equipped with MCA compatible foot stands. These sets show a Warranty Start Date code of 05/06/98 or later on the telephone set label. These sets also have the required jumper.

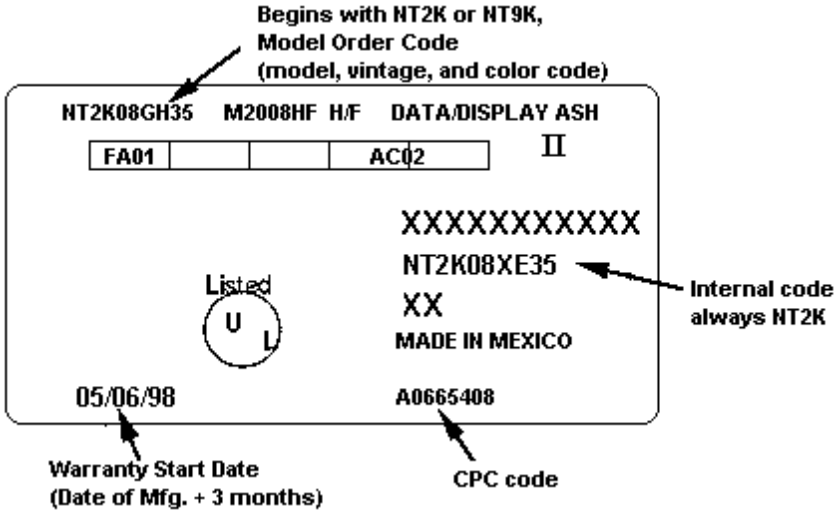


Figure 5 Telephone set label with required Warranty Start Date

Note: For telephones manufactured before February 6, 1998, the foot stand will have to be replaced with the MCA compatible foot stand. These sets also require the installation of a jumper inside the telephone. Refer to Appendix B for additional information on phones that do not have the MCA compatible foot stand.

MCA Installation

The Meridian Communications Adapter (MCA) allows personal computers to connect to the Meridian Modular (Digital) Telephone, using an RS-232 connector.

The MCA installation consists of preparing the telephone for the MCA installation, installing the MCA, and connecting the telephone to your PC. When these steps are completed, proceed to the "Configuring the MCA" section.

Caution: Before handling internal set components, static electricity must be discharged by touching any grounded metal surface.

Ensure the minimum requirements are met. Refer to the "Requirements for the MCA" section located in this chapter.

Note: Do not wall mount a telephone with MCA installed.
The wall mount knockout located on the bottom of the telephone foot stand must be in place. If this knockout is damaged or missing you must replace the foot stand with a new one before installing the MCA.

Preparing the Telephone for MCA Installation

To Prepare the Telephone for the MCA Installation:

1. Disconnect and remove all cords (including the handset cord) from the telephone.
2. Place the telephone, upside-down, on a padded level surface.
3. Remove the two screws that connect the foot stand to the telephone base.
4. If you have the NT9K or NT2K telephone (Warranty date code of May 6, 1998 or later):
   a. Remove and set the foot stand aside (you will reattach this foot stand onto the telephone base after the MCA is installed).
   b. Proceed to the "Installing the MCA" section below.

   Or
   If you have the NTZK or NT2K telephone (date code prior to May 6, 1998), refer to Appendix B for additional information.

Installing the MCA

To Install the MCA:

1. Install the MCA in the foot stand:
   a. Tilt the MCA PC board so that the DB-25 connector fits into the break-out section.
   b. Lower the board into position on the bottom of the foot stand.
   c. Secure the board using the two screws provided.

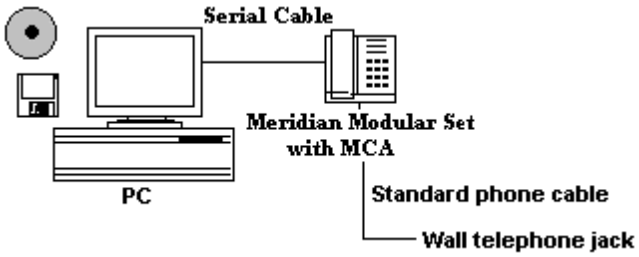
2. Install the Jumper board on the 2X7 pin connector.
    a. If a Power Supply board was not installed on the NTZK or NT2K, then there are 2 Jumper plugs on the 2X7 pin connector.
    b. Remove the 2 Jumper plugs before installing the Jumper board onto the 2X7 pin connector.
3. Plug one end of the short 8-conductor line cord, provided with the MCA, into the data jack in the base of the telephone. Plug the other end of this cord into connector J1 on the MCA.
4. Reassemble the foot stand onto the base using the four screws you removed.
5. Reconnect all cords, including the handset cord and new 24Vwall transformer.
6. Locate the label that was included with the MCA, and place it on the telephone base close to the existing set label for future tracking purposes.
7. You are now ready to connect your personal computer to your telephone. Refer to the manufacturer directions for installation instructions.

After you have installed the MCA, connect the telephone to your PC.

Connecting the Telephone to the PC

To Connect the Telephone to the PC:

1. Connect the MCA to one of the computer's serial ports using a DB-25 to DB-25 (or DB-9) serial cable.
2. Connect the phone to the adapter in the phone jack with a standard phone cable.



You are ready to configure the MCA. Refer to the "Configuring the MCA" for detailed information.

Configuring the MCA

The Meridian Communications Adapter (MCA) is used to pass *synchronous and* asynchronous data through Nortel Networks systems by using the Meridian Modular Telephone. The following configuration must be completed before installing and running the TAPI SP for MCA. Refer to Appendix B for additional configuration and MCA user information.

To Configure the MCA Using the Keypad:

1. Verify that the following:
   The red LED at the rear of the telephone set is flashing.
   The serial modem cable is installed between your PC COMM port (1-4) and the MCA.
2. Enter the following Program key sequences from your set:
   a. Press the **Program** key on your telephone, enter **67**, select **Unlock,** and press the **Program** key. (Unlock the MCA)
   b. Press the **Program** key, enter **65**, and press the **Program** key. (Reset the MCA)
   c. Press the **Program** key, enter **22**, enter **2400** for the baud rate, and press the **Program** key. (Change the baud rate)
   d. Press the **Program** key, enter **20,** and press the **Program** key. (Asynchronous mode)
   e. Press the **Program** key, enter **34,** and press the **Program** key. (Force DTR on)
   f. Press the **Program** key, enter **66**, and press the **Program** key. (Select Modem emulation)
3. Press the **Program** key, enter **67**, select **Lock,** and press the **Program** key. (Lock MCA)

You are now ready to install the TAPI SP for MCA. Proceed to Chapter 3. Refer to Appendix B for additional information on the MCA.

Chapter 3 Installing the TAPI SP for MCA

This chapter provides instructions and information for installing The TAPI SP for MCA and includes the System requirements and hardware configurations.

System Requirements for Installing the TAPI SP for MCA

Before you install and configure the TAPI SP for MCA, you should become familiar with the system hardware and software requirements, hardware configuration and connectivity as described in this section.

Installation of the TAPI SP for MCA requires the hardware and software listed in the following sections. Install the required hardware and software before installing the service provider software.

Note: Lower system speeds and lower memory capacities may adversely affect system performance.

Be sure to read the latest release notes and README.TXT files that came in your package before attempting to install any software.

Minimum PC Hardware Requirements

The minimum hardware requirements for the TAPI SP for MCA include:

- 486/66 MHz

  16 MB of RAM is recommended. Also check the application requirements.
  The amount of memory needed by the TAPI SP for MCA to run is 196KB. This increases as the number of DNs and features assigned to the set increases, but is never more than 25%.

- The amount of free disk space that is needed for the TAPI SP for MCA is dependent upon which type of installation you choose. The Typical install requires 4 Mg of hard disk space. The three types of installation are as follows:
  The install will ask you for the type of installation as follows:
  - COMPACT - This installation will only install the Service Provider
  - TYPICAL - This will install the Service Provider and associated diagnostic utilities as well as the online documentation
  - CUSTOM - This will allow you to install only the components you choose.

  Additional free disk space is required for running TAPI applications. Refer to the appropriate TAPI application document for information regarding additional disk space needed for the application

- Mouse (optional, but strongly recommended for installation)
- COMM 1, COMM 2, COMM 3, or COMM 4 available
- VGA or SVGA display

Minimum PC Software Requirements

The minimum software requirements for the TAPI SP for MCA include:

- Windows NT 4.0 Service Pack 3 / Service Pack 4
- Windows 2000
- Windows 95 - using Microsoft TAPI SP 2.1 software
- Windows 98

Interface Devices

- Meridian Communications Adapter (MCA - NT2K69AA), for use on M1 options 11-81 with all cables and power supply.

Cables

- NT5P41AP PC Serial/Modem Cable or VISIT Interface Unit Cable (DB-9/DB-25)

Configuring the PBX and Switch Equipment

The following sections provide the configuration information needed to install the TAPI SP for MCA on the M1 Option 11-81 PBX.

Configuring the Meridian 1/SL-1 PBX

This section describes and illustrates the components needed for the installation of the TAPI SP for MCA on M1 Option 11C to 81C PBXs with X11, R22, R23, and R24. Included are the necessary software releases, line cards, telephones, and interface devices supported. Required cabling is also listed. A sample M1 Option 11-81 telephone set configuration is provided.

Software Releases

The software release required:

- for Meridian SL-1 -- X11 Release 14 or greater
- for Meridian 1 Option 11 -- X11 Release 16 or greater
- for Meridian 1 Option 21-81 -- X11 Release 15 or greater

Line Cards

One of the following line cards is required.

- NT8D02AB and above Digital line card in an IPE module
- QPC578 Digital line card in a PE module

Telephones Supported

The following Meridian Modular Telephones are supported:

- M2006
- M2008
- M2216ACD-1
- M2216ACD-2
- M2616

The following Orion Telephones are supported only in Europe:

- M3110
- M3310
- M3820

Figure 6 shows the TAPI SP components on Meridian 1 Option 11-81.

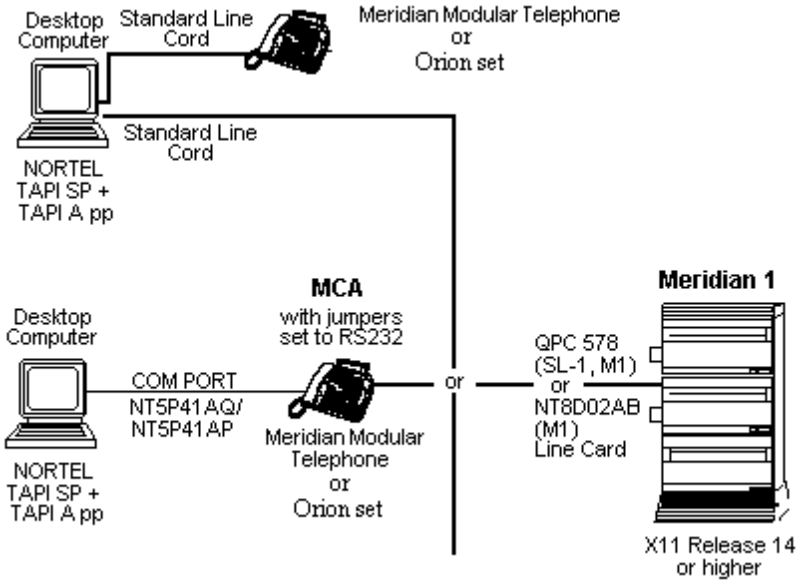


Figure 6 TAPI SP components on Meridian 1 Option 11-81

Sample M1 Option 11-81 Telephone Set Configuration

Table 2 lists telephone set configuration information required for Meridian 1 Option 11-81 PBXs. Use this sample configuration when adding a new M2006, M2008, M2216 ACD or M2616 Meridian Modular Telephone (MMT) or a M3110, M3310, M3820 Orion set.

Table 2 Sample M1 Option 11-81 telephone set configuration

LD 11		
REQ	NEW	
TYPE	2006, 2008, 2216 or 2616	
TN	L S C U	(Terminal number for set)
DES	Designation	
AOM	<cr>	
	<cr>	
	.	
	.	
RNPG	0	
CLS	CNDA, DNDA, ADD,	
	<cr>	
	.	
	.	
KEY	0 SCR Voice DN	(for dialing out and receiving calls)
KEY	xx SCR Optional Voice DN	
KEY	xx DSP	(must be configured to support delivery to TAPI application of Calling/Called number on incoming calls to DNs on Keys 1 or higher *before* answering the call)
KEY	xx TRN	(Call Transfer)
KEY	xx AO3 or AO6	(AO3 supports 3 party conference; AO6 supports 6 party conference)
KEY		
KEY		
KEY		
KEY		

If the telephone set is an ACD Agent set, configure the set as indicated in Table 2 with the exceptions and additions listed in Table 3.

Table 3 ACD Agent set exceptions to Table 2

CLS	CNDA, DNDA, ADD, AGN	
KEY	xx ACD xxxx yyyy	
	where:	
	xx = key number (must be key 0)	(In- Calls Key)
	xxxx = ACD DN	
	yyyy = Agent's position ID	
KEY	xx SCR DN	(For dialing out and receiving calls)
KEY		
KEY		
KEY		
KEY		

Note: In Load 95, the CPND must be set up in the switch.

The following instructions apply to the configuration in Table 3.

1. Use LD 95 to assign a name to the DNs on this set. The names will be presented to the TAPI application if allowed.
2. Use LD 23 to configure ACD Queues and enable Call Forcing for ACD sets (Refer to Meridian 1 ACD documentation for details).
3. Make sure the Meridian 1 PBX is equipped to deliver ANI/CLID and/or DNIS to the telephone set to support Screen Popping on ANI/CLID or DNIS.
4. TAPI applications cannot dial out on an In-Calls key.

Refer to ACD Feature Description NTP 553-2671-110 or X11 features and services NTP 553-3001-305 for additional information about Dialed Number Identification Service (DNIS).

TAPI SP for MCA Software Installation

This section describes the procedures that must be performed to successfully install the TAPI SP for MCA. Prior to installing this software, you must have certain hardware, software, and telecommunication configurations in place. These pre-installation configurations are detailed in the following checklist.

Pre-installation Checklist

Before installing the software, complete the following pre-installation checklist.

Note: Install and configure the MCA before installing the TAPI SP for MCA 2.0 software.

1. Uninstall any previous version of the TAPI SP for MCA. It is important to remove the previous version of TAPI software before upgrading to the new software. Refer to the "Removing the TAPI SP for MCA Software" section located in Chapter 6. If you have Desktop TAPI 1.6 installed, you must remove it using the ***Uninstall*** program located on the Desktop TAPI 1.6 installation CD ROM. Refer to the user's documentation for the Desktop TAPI 1.6 for additional information..
2. Verify that your PC meets the minimum hardware and software requirements defined in the "System Requirements for Installing the TAPI SP for MCA" section in this chapter.
3. Verify that your telephone type is one of the supported telephones listed in the "Desktop TAPI SP for MCA System Requirements" section in this chapter.

   If your telephone is an M2006, M2008, M2216 ACD set, M2616 set, or an M3110, M3310, M3820 Orion set, the Meridian 1 Option 11-81 PBX Administrator must configure the telephone set so the set will work with your TAPI application.
4. Verify that your MMT telephone set is operational and has at least one DN key to support dialing and answering calls from the TAPI application.

   Determine which telephone features your TAPI application will need to use, then verify that these features are assigned to your set. You can examine the feature keys on your telephone set or use the sample telephone set configuration printouts in this chapter as a reference while working with your telephone system administrator to verify that your phone is set up properly to support your TAPI application.
5. Verify that the telephone system to which your phone is connected is one of the configurations listed in the " TAPI SP for MCA System Requirements" section in this chapter.
6. In Table 4, 5, and 6 circle the device type, telephone type, and the COMM port on the PC you will be using.

   Table 4 Device type

Interface Device:	MCA

Table 5 Phone Type

Telephone Type	Models
Meridian Modular (MMT)	M2006 M2008 M2216 M2616
Orion	M3110 M3310 M3820

Table 6 COMM port

PC COMM Port	COMM 1	COMM 2	COMM 3	COMM 4

7. Fill in the three parts of Table 7 to record the directory numbers (DNs) that appear on your telephone set and to record the ACD DN and Position ID for the In-Calls Key for ACD sets. You may want to use names that your telephone system has already associated with the DNs. These descriptions will be used when you configure your telephone using the **Telephony** icon in the *Control Panel* window.

Table 7 Directory Numbers (DNs) on your set

Key	Telephone DN	Name

Key	ADC DN	Position ID	Name
0			

8. If your telephone is equipped with an MCA, ensure it is correctly installed and verify the following configuration has been completed (refer to Chapter 2 for detailed MCA installation and configuration information):
   - The red LED at the rear of the telephone set is flashing.
   - The serial modem cable is installed between your PC COMM port (1, 2, 3, or 4) and the MCA
   - Enter the following Program key sequences from your set:
     a. Press the **Program** key on your telephone, enter **67**, select **Unlock,** and press the **Program** key. (Unlock the MCA)
     b. Press the **Program** key, enter **65**, and press the **Program** key. (Reset the MCA)
     c. Press the **Program** key, enter **22**, enter **2400** for the baud rate, and press the **Program** key. (Change the baud rate)
     d. Press the **Program** key, enter **20,** and press the **Program** key. (Asynchronous mode)
     e. Press the **Program** key, enter **34,** and press the **Program** key. (Force DTR on)
     f. Press the **Program** key, enter **66**, and press the **Program** key.(Select Modem emulation)

Cautions and Preparations

The installation process includes only the installation of the TAPI SP for MCA. The TAPI SP for MCA must be installed first and your phone configured before installing any TAPI applications, as described in the following procedures.

Note: Refer to the README.TXT file provided with the TAPI SP for MCA software before continuing.

This service provider is designed to run with TAPI 2.0 and above. In order to run this on Windows 95, you must install the TAPI Service Provider Service Pack available from Microsoft. The Microsoft TAPI 2.1 files are found on Microsoft's web page (www.Microsoft.com).

For Windows NT, you must be logged in as Administrator or an account with Administrator rights to install the TAPI SP for MCA and to add this Service Provider to the Windows Telephony configuration.

Installing the TAPI SP for MCA Software

The TAPI SP for MCA software is available in a variety of packages as indicated in Chapter 1. It is normally delivered via CD-ROM. If applicable, refer to the user documentation provided with your application for special instructions on loading the TAPI SP software in conjunction with the application.

The Symposium Desktop TAPI SP 2.0 for MCA CD-ROM contains three folders as follows:

- TAPISP16 Symposium Desktop TAPI SP version 1.6 and on-line documents (Refer to the Desktop TAPI SP 1.6 documentation for detailed installation and configuration instructions)
- TAPISP20 Symposium Desktop TAPI SP for MCA version 2.0 software
- Docs On-line documents for the Symposium Desktop TAPI SP for MCA version 2.0

There are three types of installation offered, Typical, Compact, and Custom. The Typical installation installs the software, the online documentation, and the troubleshooting tools. The Compact installs only the Symposium TAPI MCA 2.0 software. The Custom allows you to select the components you wish to install. If the online document is installed, it is displayed in the **Desktop TAPI SP for MCA** program group.

Prior to installing the TAPI SP for MCA software, ensure the Pre-installation checklist (located in the "Pre-installation checklist" section in this chapter) is complete.

Note: If you have a previous version of the Symposium TAPI MCA installed, remove the previous version before installing this software. If necessary, refer to the "Removing the TAPI SP for MCA Software" section located in Chapter 6.

If you have the Desktop TAPI SP 1.6 software installed, you must use the **Uninstall** option located on the installation CD. Refer to the *Desktop TAPI SP 1.6 User's Guide* for detailed information on uninstalling the software.

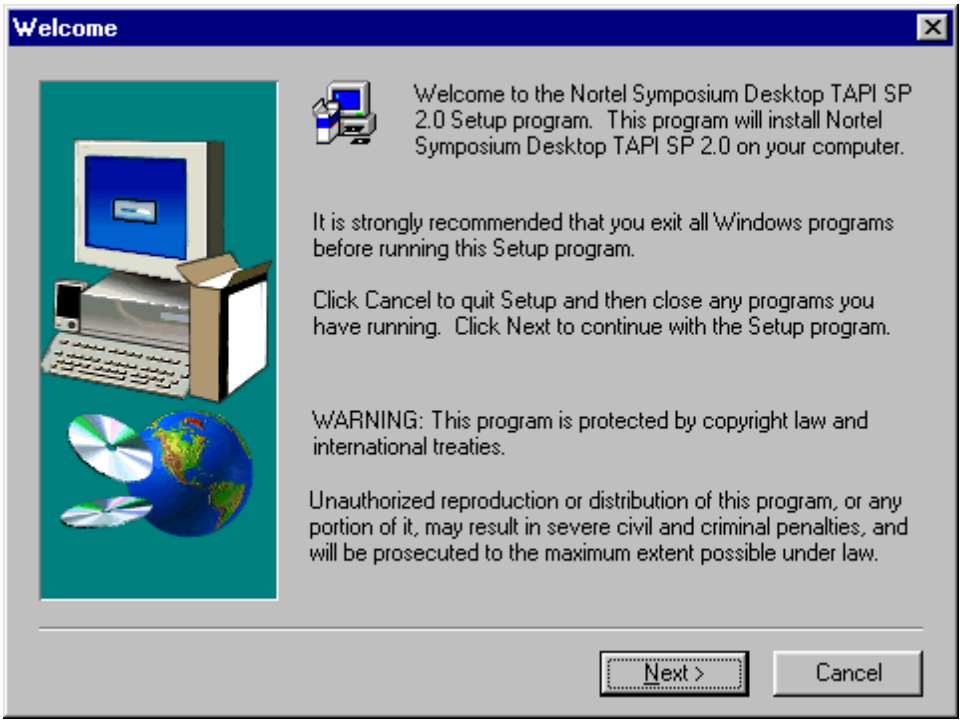
Instructions are provided for installing the TAPI SP for MCA from a CD ROM only.

Note: **Before starting the TAPI SP for MCA software installation, close any TAPI applications that are running.**

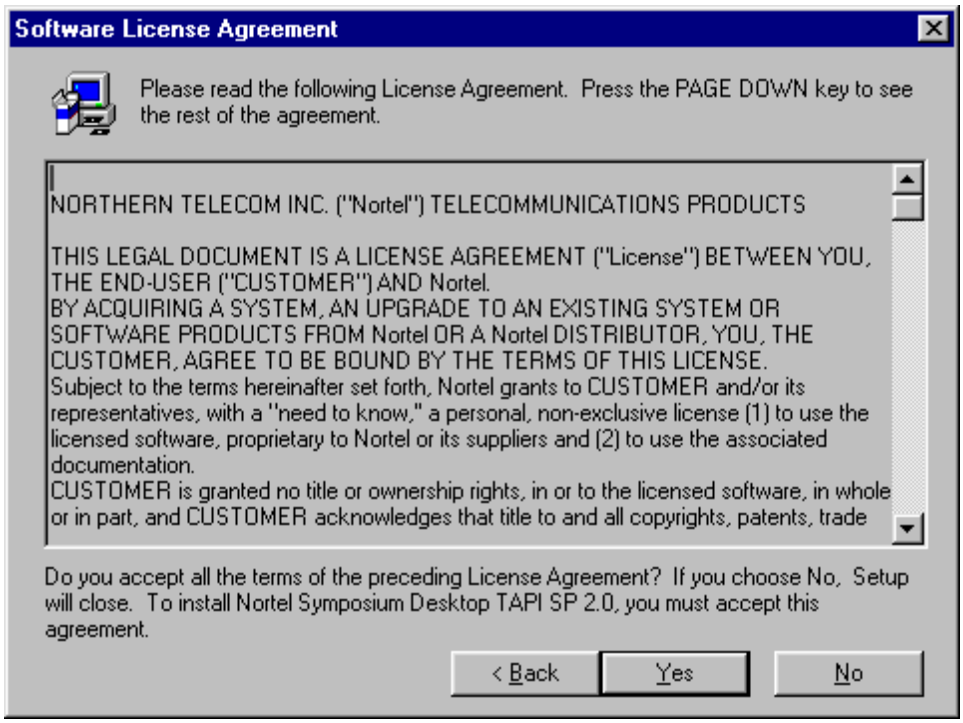
To Install the TAPI SP for MCA Software:

1. Insert the Desktop TAPI SP for MCA CD ROM that contains the TAPI SP for MCA installation software in the CD ROM drive.
2. Click on the **Start** button and Select **Run**.
   The *Run* dialog box is displayed.
3. Type the **path for the CD ROM** followed by ***\TAPISP20\setup.exe*** in the *Run* dialog box.
   For example:
   E:\TAPISP20\Setup.exe
4. Click on the **OK** button.
   The installation process begins.

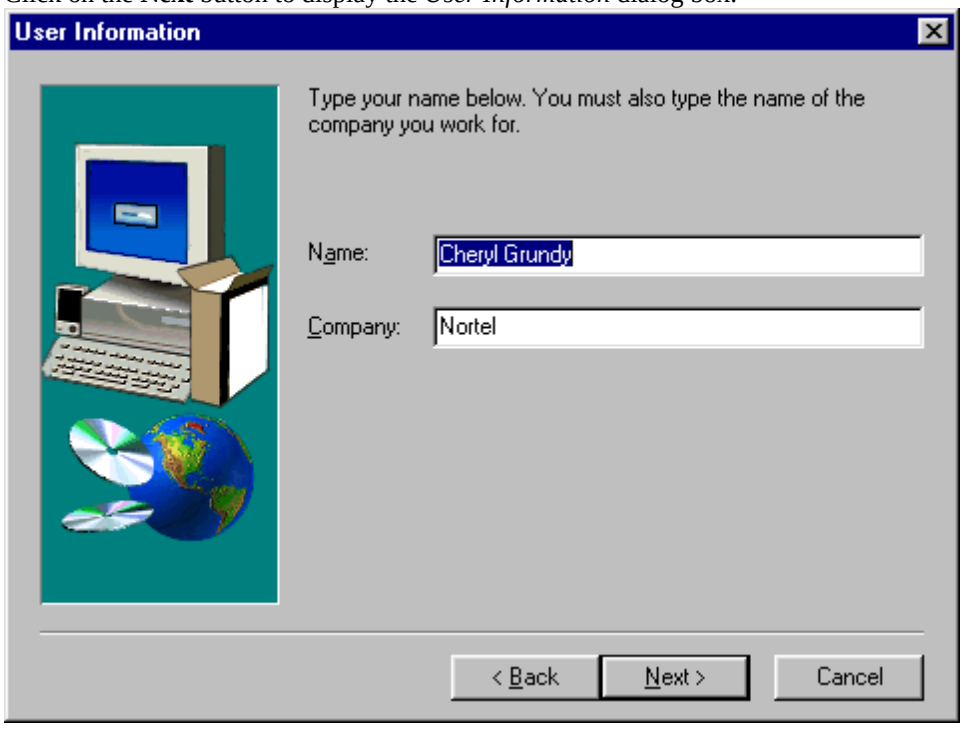
The *Welcome* dialog box is displayed:



5. After reading the information on the *Welcome* screen, click on the **Next** button to continue the installation.
   The *Software License Agreement* dialog box is displayed.

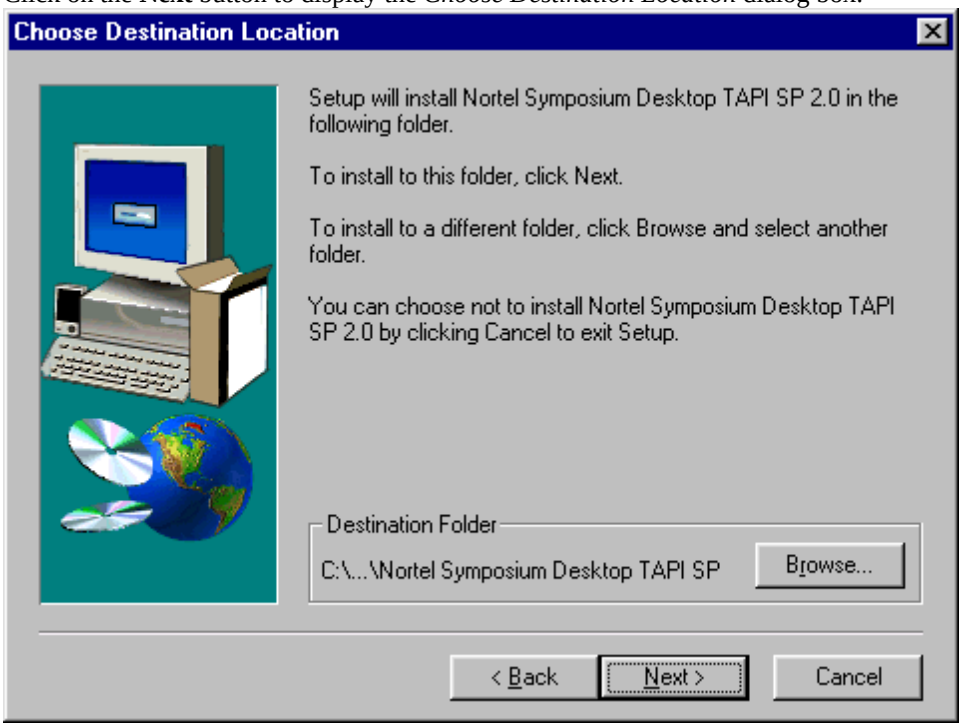


6. Read the License Agreement and click on the **Yes** button to accept the terms of the License agreement and continue the installation.
   Or
   Click on the **No** button to cancel the installation.
7. If you clicked on the **Yes** button, the *Information* dialog box appears.
8. Click on the **Next** button to display the *User Information* dialog box.



9. Enter your ***Name*** and ***Company*** name in the fields provided.

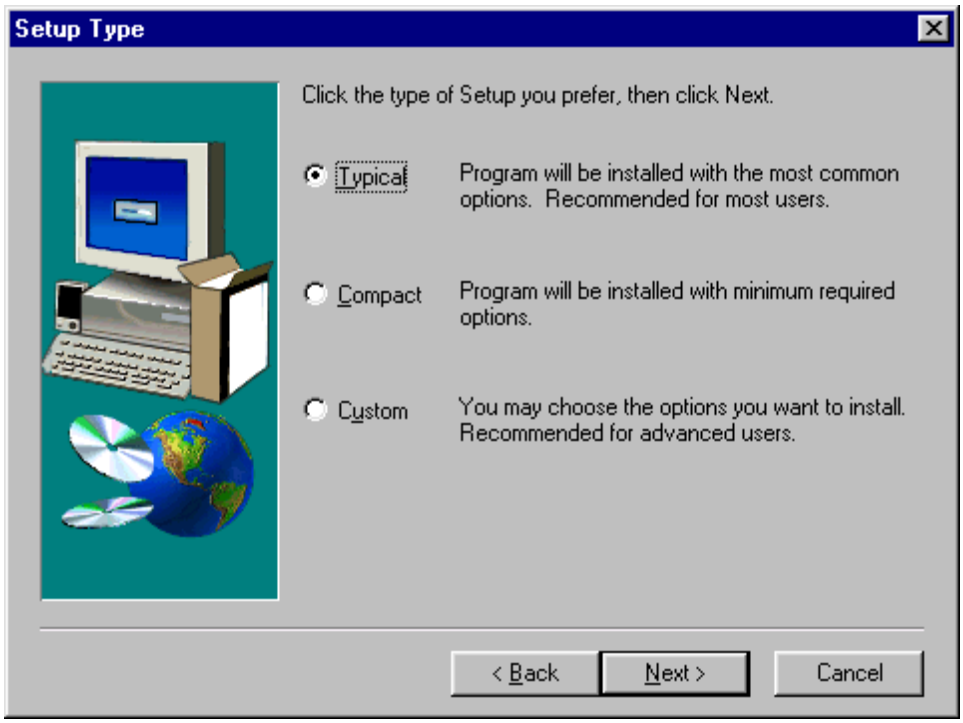
10. Click on the **Next** button to display the *Choose Destination Location* dialog box.



11. Click on the **Next** button to accept the default directory and to display the *Setup Type* dialog box.
    Or
    Click on the **Browse…** button and enter or select a new path name. The drive in the path name must have Windows 95 or Windows NT installed.

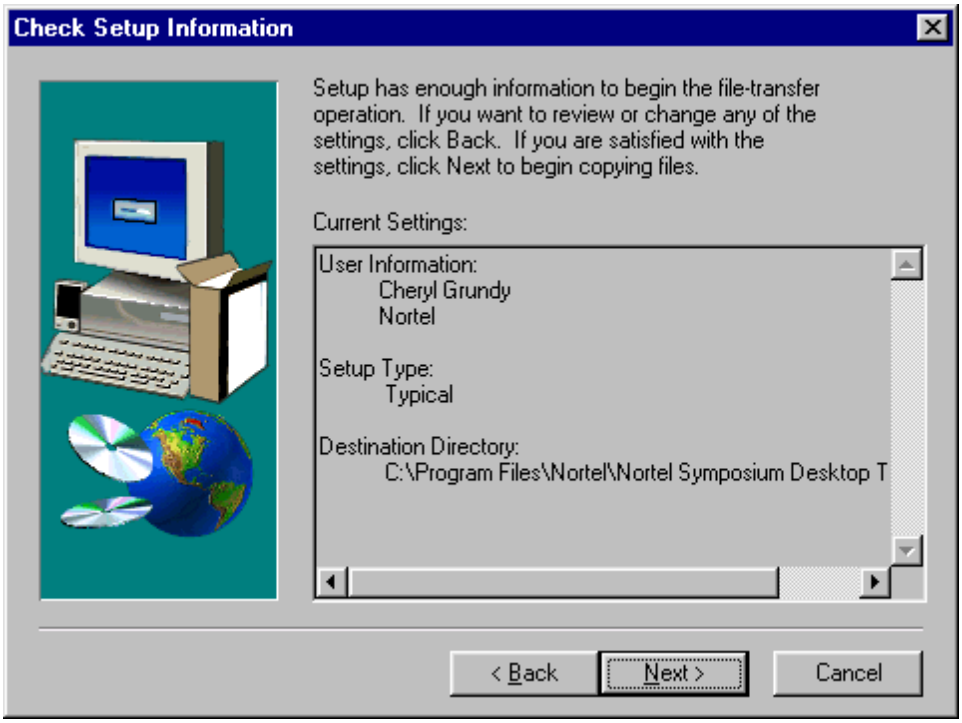
    a. Click on the **OK** button to close the dialog box and display the *Choose Destination Location* dialog box.

    b. Click on the **Next** button to display the *Setup Type* dialog box.



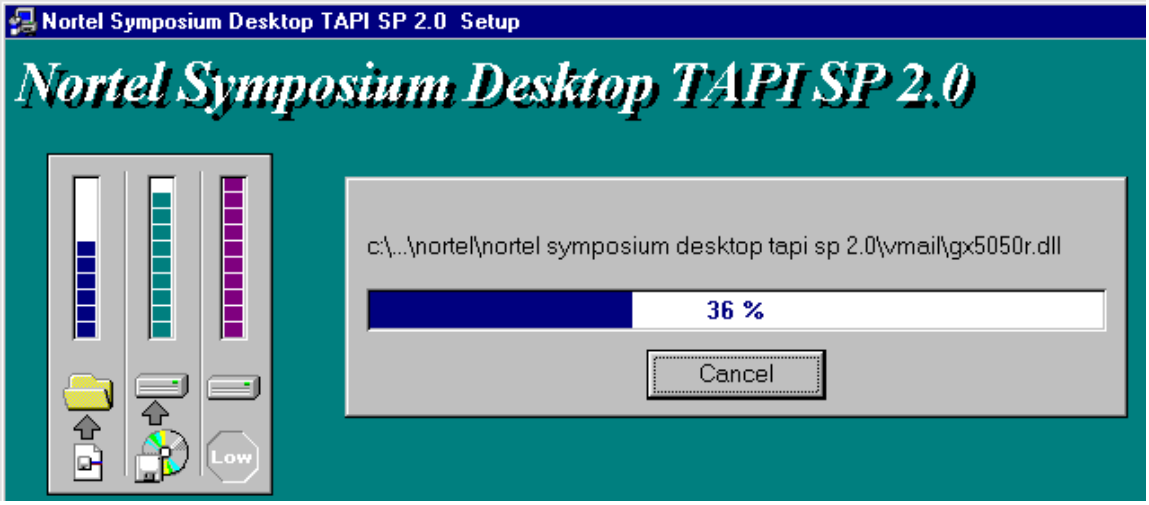
8. Accept the default **Typical** installation if you want the software, documentation, and Troubleshooting tools installed. Click on the **Next** button to display the *Select Program Folder*.
   Or
   Click in the radio button to select the type of setup you prefer. Select the **Compact** option if you want to install only the TAPI MCA 2.0 software or the **Custom** option if you want to select which components will be installed. Click on the **Next** button to display the *Select Program Folder* dialog box.

9. Click on the **Next** button to accept the default Program Folder name to display the *Check Setup Information* dialog box.
   Or
   Enter or select a new Program Folder name and click **Next** button to display the *Check Setup Information* dialog box.

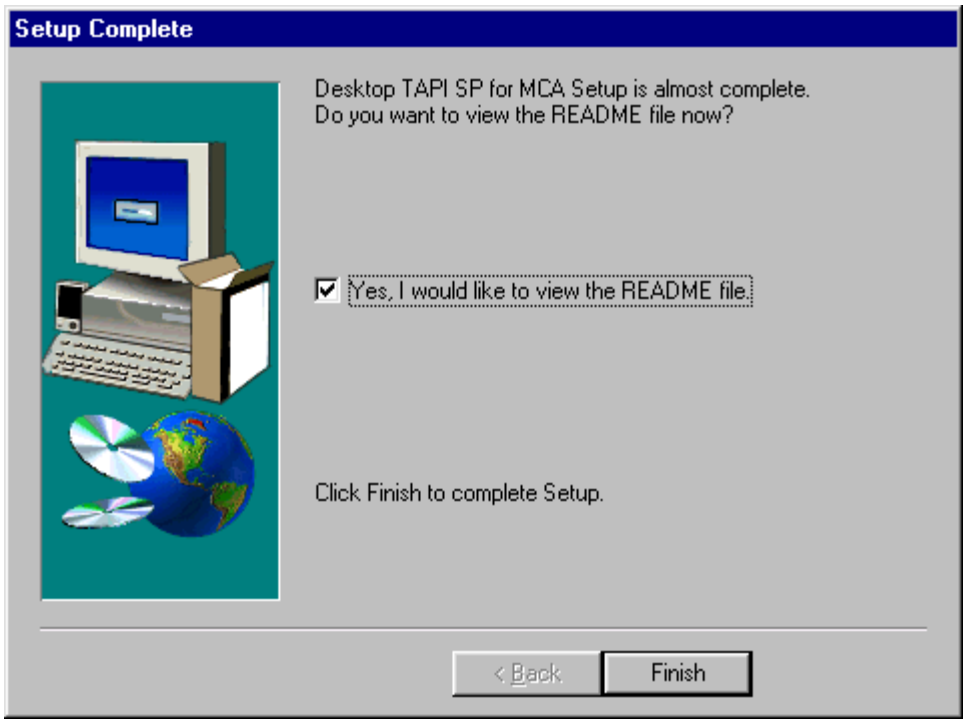


10. Check the information and ensure it is correct. Clicking on the **Back** button allows you to view the previous screens and correct any incorrect information. When the information is correct, click on the **Next** button to install the files.

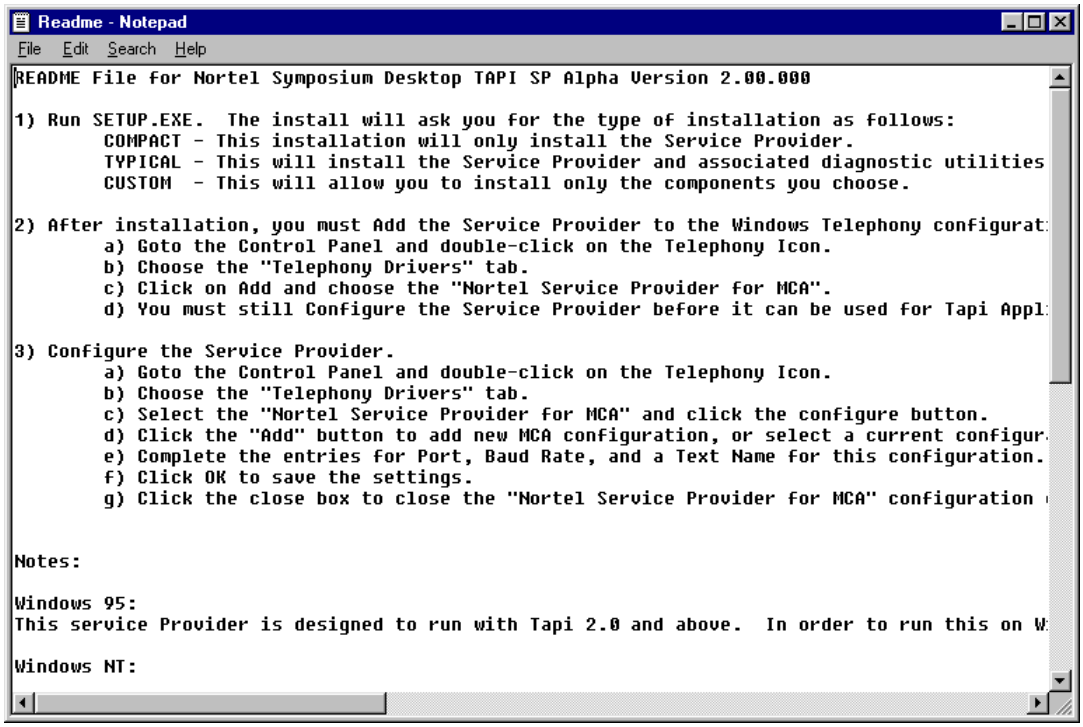
    The *Setup* dialog box displays the files that are being installed.



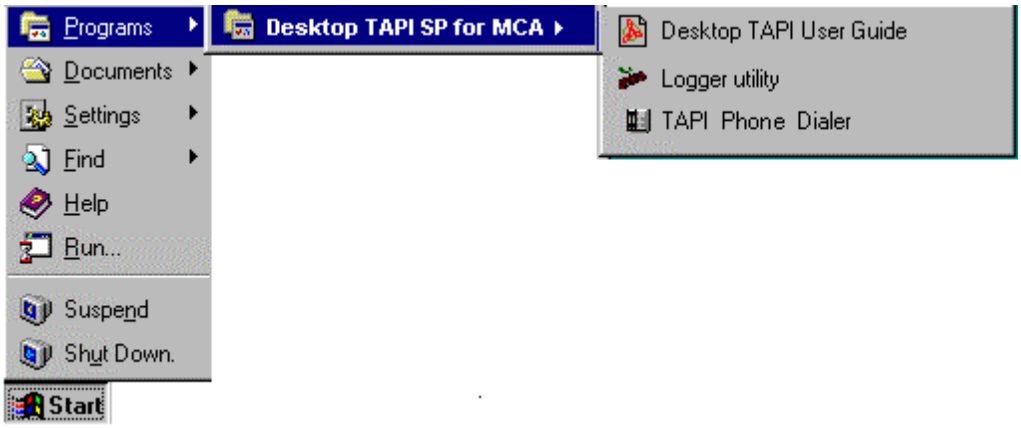
    The *Setup Complete* screen notifies you when the installation is complete.



11. Click on the **Finish** button. The Readme.txt information is displayed.



12. Read the Readme.txt file then close the window to complete the installation.
13. Remove the CD ROM or diskette from the drive.
14. Click on the **Start** button, select **Programs**/ **Desktop TAPI SP for MCA** to verify that the **Desktop TAPI SP for MCA** program group contains the following icons:



You are now ready to configure the TAPI SP for MCA 2.0.

Refer to Chapter 4 for detailed instructions on configuring the TAPI SP for MCA software . Refer to Chapter 6 for detailed information on using the JulMar TAPI Phone Dialer and the TAPI Logger.

Chapter 4 Configuring the TAPI SP for MCA Software

This chapter provides information on configuring the TAPI SP for MCA 2.0.

Overview of the Configuration Process

The Symposium Desktop TAPI Service Provider 2.0 for MCA (TAPI SP for MCA) enables TAPI compliant applications to communicate calling information and other commands to and from applications. Before installing TAPI applications, you must configure the TAPI SP for MCA. Certain configurations require you to restart Windows to enable the changes.

Note: The dialog boxes shown in this section are examples of Windows 95 dialog boxes. If you have Windows NT, the dialog boxes you see may vary. However, the information on Windows 95 and Windows NT dialog boxes are the same.

Steps for Configuring the TAPI SP for MCA

Configuration options are selected from the *Nortel TAPI SP Setup* dialog box. Configuring the TAPI SP for MCA consists of the following steps:

1. Access the *Dialing Properties* dialog box. Close all applications that use TAPI.
2. Add the Desktop TAPI Service Provider Driver to the Windows Telephony configuration.
3. Add a new line.
4. Confirm the MCA Device is setup properly.
5. Configure the DNs and Addresses.
6. View or change the configuration.

The following sections provide instructions for each step.

Note: This service provider is designed to run with TAPI 2.0 and above. In order to run this on Windows 95, you must install the Microsoft TAPI Service Provider 2.1 upgrade available from Microsoft.

For Windows NT, you must be logged in as Administrator or an account with Administrator rights to install the TAPI SP for MCA and to add this Service Provider to the Windows Telephony configuration. However, the configuration can be done as a user. The TAPI SP for MCA applications and diagnostic utilities can be used by users.

Accessing the Dialing Properties Dialog Box

To Access the Dialing Properties Dialog Box:

1. After installing the TAPI SP for MCA software and restarting Windows, click on the **Start** button and select **Settings**.
2. Double-click on the **Control Panel** icon.

   The *Control Panel* window displays the **Telephony** icon 

.

   Note: If the **Telephony** icon does not display (in Windows 95) after installing the TAPI SP for MCA software, you must install the Windows Telephony Dialer software. This is found on your Windows 95 CD ROM.

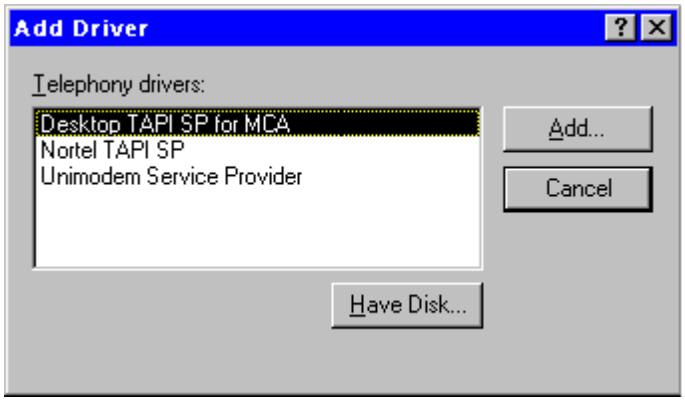
3. Double-click on the **Telephony** icon.

   The *Telephony Drivers* tab page located on the *Dialing Properties* dialog box displays a list of Installed Drivers on the left side.

Adding the Desktop TAPI SP for MCA Driver

To Add the Desktop TAPI SP for MCA Driver:

1. From the *Telephony Drivers* tab page located on the *Dialing Properties* dialog box, click on the **Add** button. The *Add Driver* dialog box displays the *Telephony Drivers* list containing the Desktop TAPI SP for MCA.

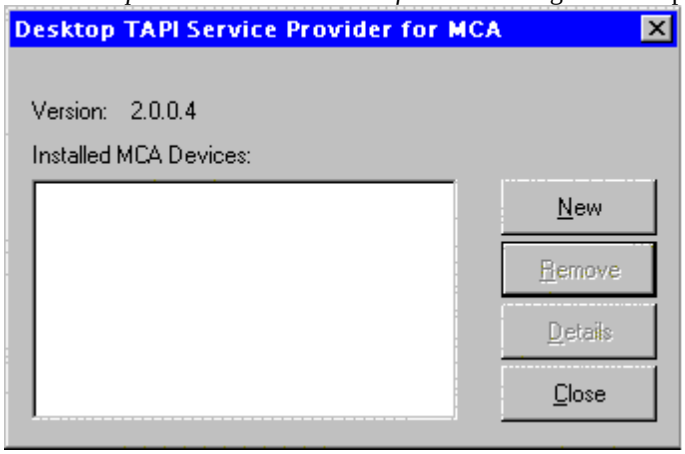


2. Click on **Desktop TAPI SP for MCA** to highlight it.
3. Click on the **Add** button.
   The Nortel Service Provider for MCA is displayed on the *Telephony Drivers* tab page located on the *Dialing Properties* dialog box.

Adding a New Line

To Add a New Line:

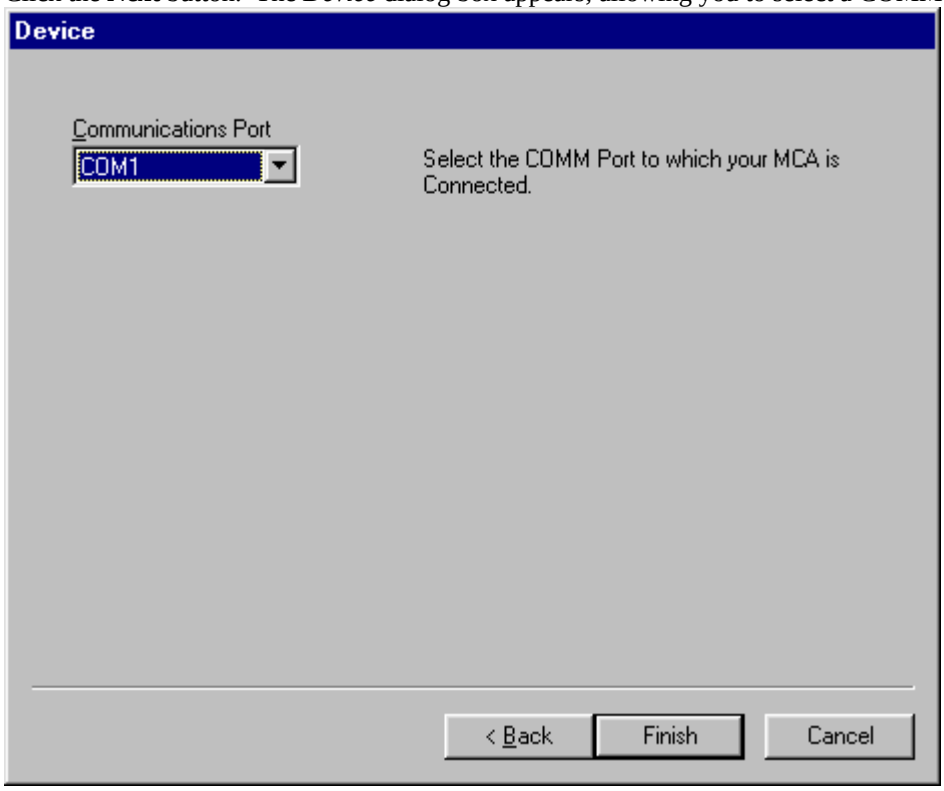
1. From the *Telephony Drivers* tab page located on the *Dialing Properties* dialog box, select the **Desktop TAPI SP for MCA,** if not highlighted**.**
2. Click on the **Configure** button.
   The *Desktop TAPI Service Provider for MCA* dialog box is displayed.



3. Click on **New** to add a new line device.
   The *Device* dialog box is displayed.

4. Enter the ***Name*** of the Device in the *Name for this Device* field. TAPI will use this to identify the line. A commonly used name is "MCA."

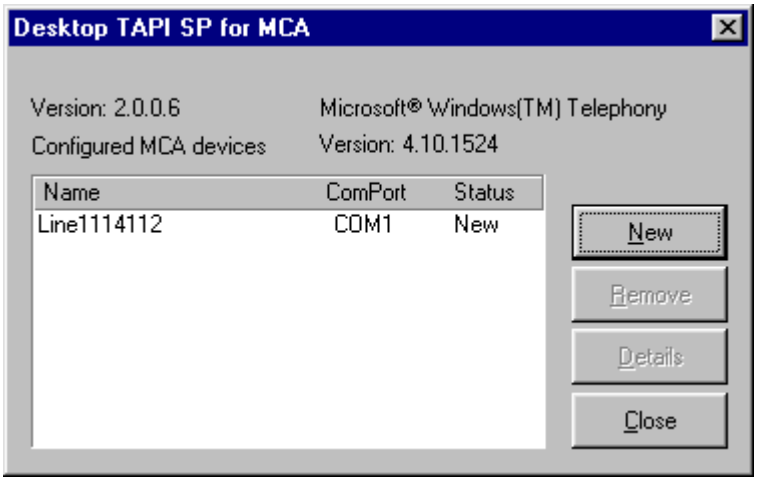
5. Click the **Next** button. The *Device* dialog box appears; allowing you to select a COMM Port.



6. Click on the down arrow located to the right of the *Communication Port* field to select the COMM port to which the MCA is connected.

7. Click on the **Finish** button to save the configuration. The *MCATSP.TSP* information dialog box is displayed.

8. Click **OK.** The *Desktop TAPI Service Provider for MCA* dialog box displays the Device Name, COMM Port and the status of the MCA as **New**.



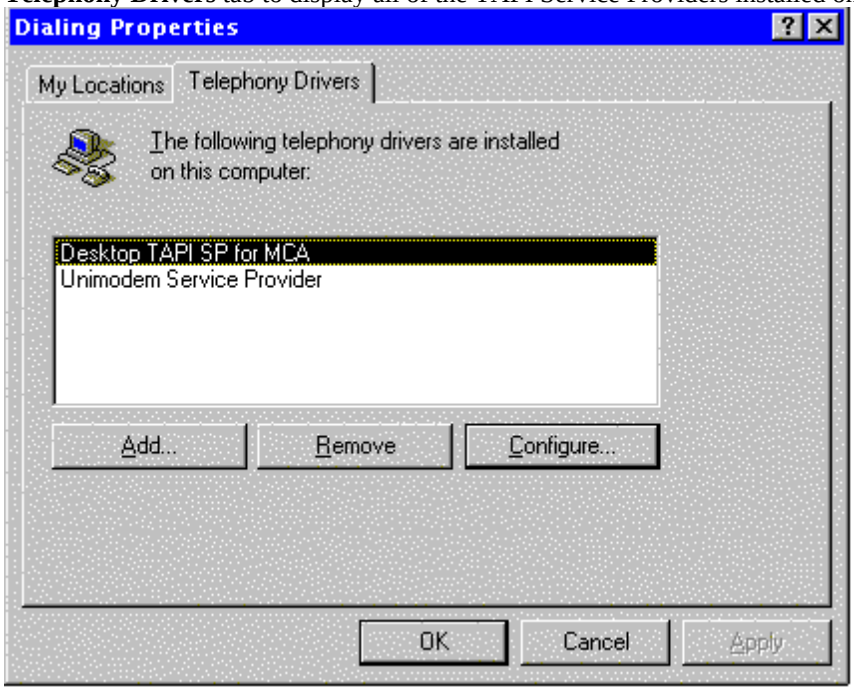
9. Click **Close** to close this dialog box.

Note: You must exit the Control Panel and reenter or start the TAPI application to see the line that was added and update the status from "New" to "OK." Refer to the "Confirming the MCA Device is Setup Properly" section for additional information.

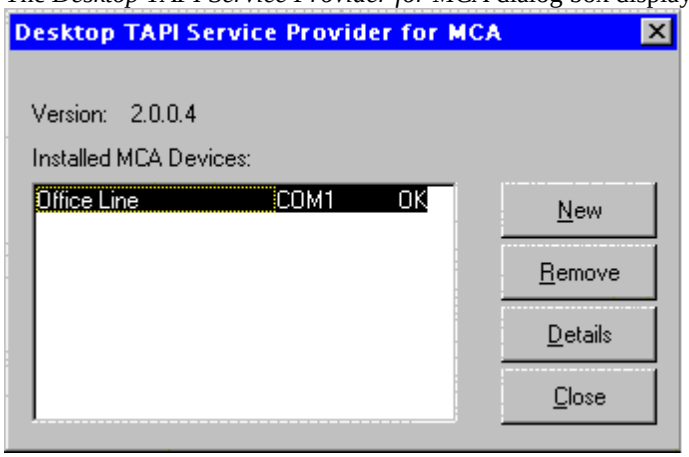
Confirming the MCA Device is Setup Properly

To Confirm the Device is Setup Properly:

1. Access the Control Panel and double click on the **Telephony** icon to reinitialize the driver. It may take a few seconds for the *Dialing Properties* dialog box to appear but when it does, click on the **Telephony Drivers** tab to display all of the TAPI Service Providers installed on your PC.



2. Select the **Desktop TAPI SP for MCA** (if not highlighted**)** and click on the **Configure** button**.** The *Desktop TAPI Service Provider for MCA* dialog box displays the Status of the MCA.



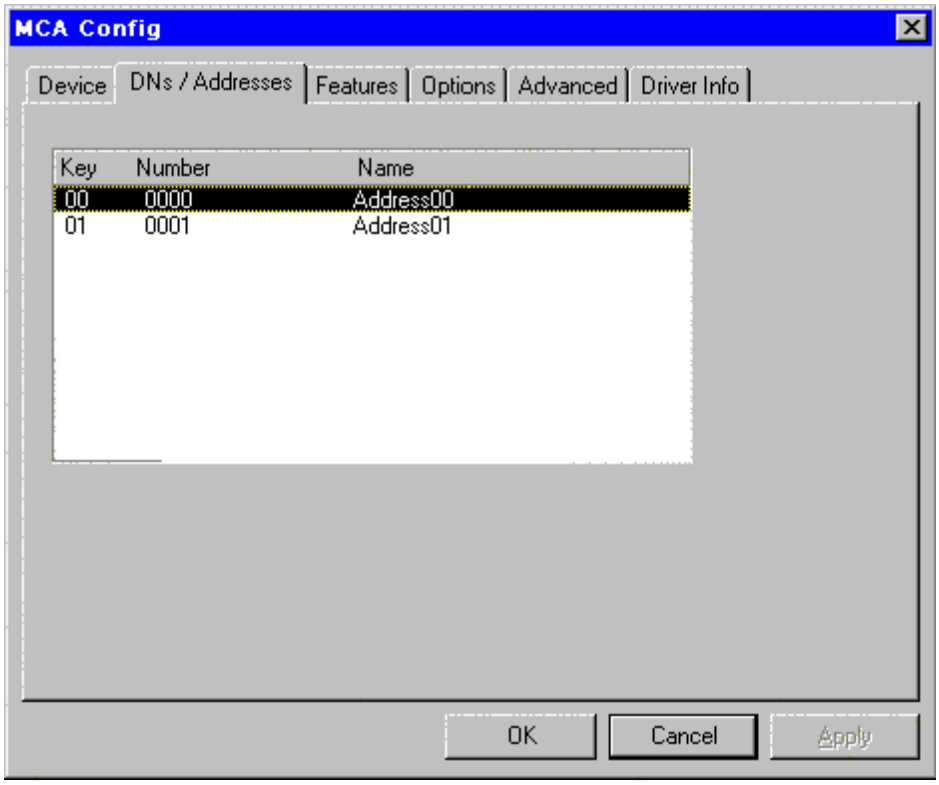
3. Ensure the status of the device is now "OK."

Note: If the status is "Fail", click the **Details** button to display the *Diagnostics* dialog box, then check the items suggested and also quit all TAPI applications that are running. If the status still shows "Fail" it may be necessary to reboot your PC. If after rebooting your PC, you still receive a "Fail" status, refer to the "Desktop TAPI SP for MCA Fails" section located in Chapter 6 for additional information.

Configuring the DNs and Addresses:

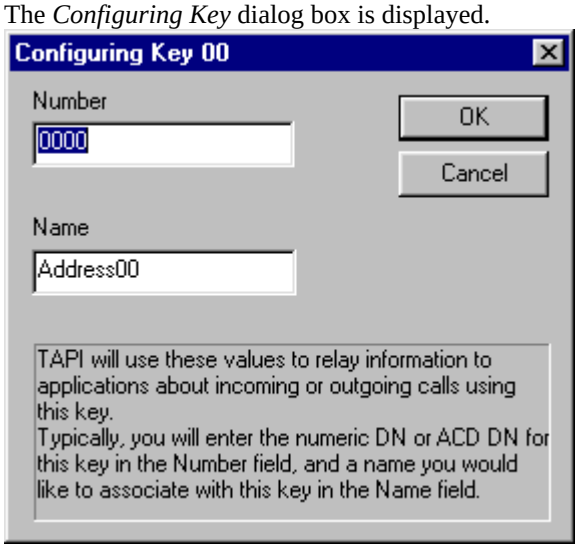
To Configure the DNs and Addresses:

1. Ensure the status of the MCA Device is “OK” on the *Desktop TAPI Service Provider for MCA* dialog box. Refer to the “Confirming the MCA Device is Setup Properly” section for additional information.
2. Click on the **Details** button.
   The *MCA Config* dialog box is displayed.
3. Click on the **DNs/Addresses** tab to view the DN's. This tab page also allows you to assign a Name and Number for each address.



To Assign a Name and Number for each address:

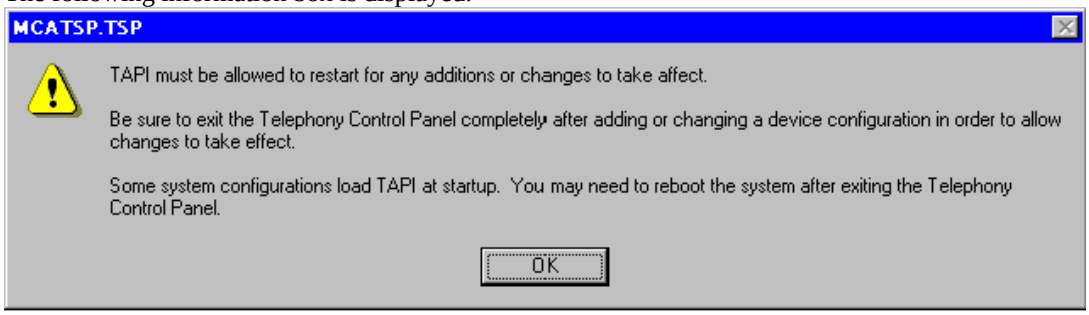
a. Double click on the Key number you wish to change.
The *Configuring Key* dialog box is displayed.



b. Enter the ***Number*** (DN) of the address and the ***Name*** of the line. The Name can be any alphanumeric characters (maximum of 20 characters). Typically, you will enter the numeric DN or ACD DN for this key in the number field, and a name you would like to associate with this key in the name field. You may want to use the same name that is configured on the switch for this DN.

c. Click on the **OK** button to save the configuration.
Or
Click on the **Cancel** button to cancel the configuration. The *MCA Config* dialog box is displayed with the new name and number information displayed for the key.

4. Click on the **Apply** button then the **OK** button to save the configuration.
The following information box is displayed.



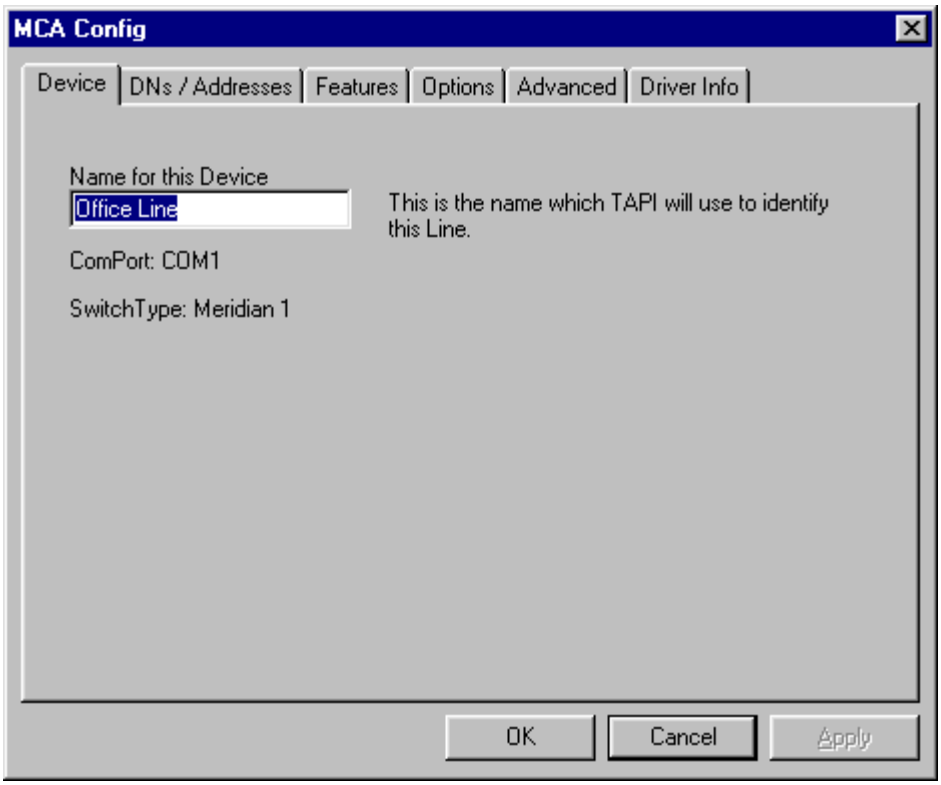
5. Click on the **OK** button.

Note: You must exit the Control Panel and reenter or restart the TAPI application for the changes to take effect. Refer to the "Confirming the MCA Device is Setup Properly" section for additional information.

Viewing and Changing the MCA Configuration

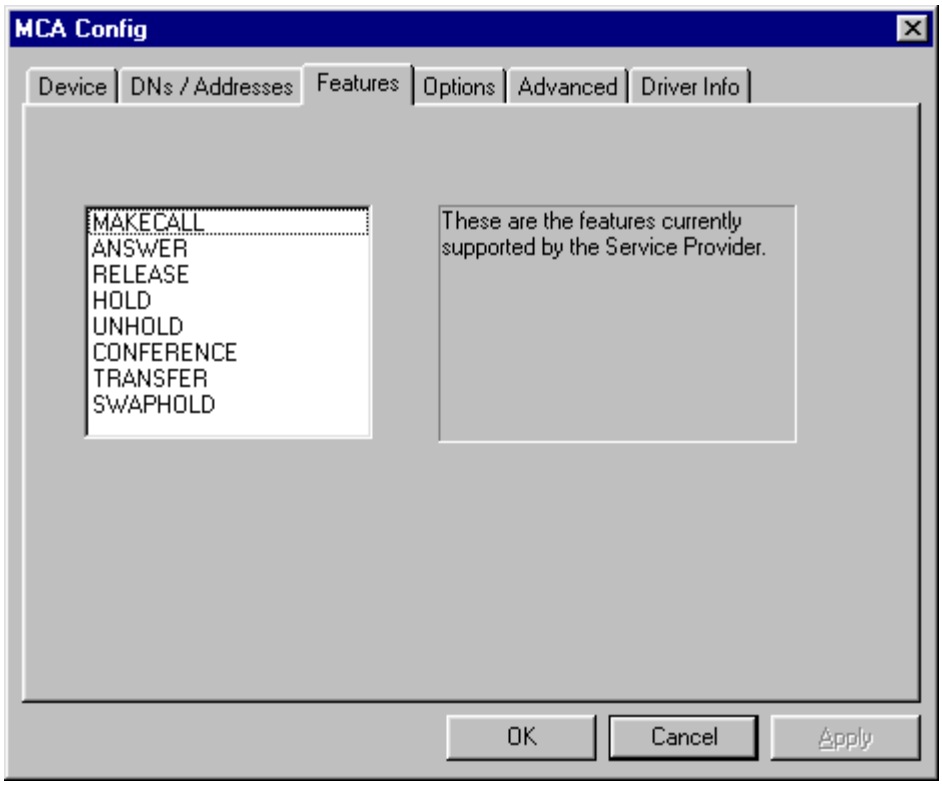
To View and Change the MCA Configuration:

1. Ensure the status of the MCA Device is "OK" on the *Desktop TAPI Service Provider for MCA* dialog box. Refer to the "Confirming the MCA Device is Setup Properly" section for additional information.
2. Click on the **Details** button.
The *MCA Config* dialog box is displayed.

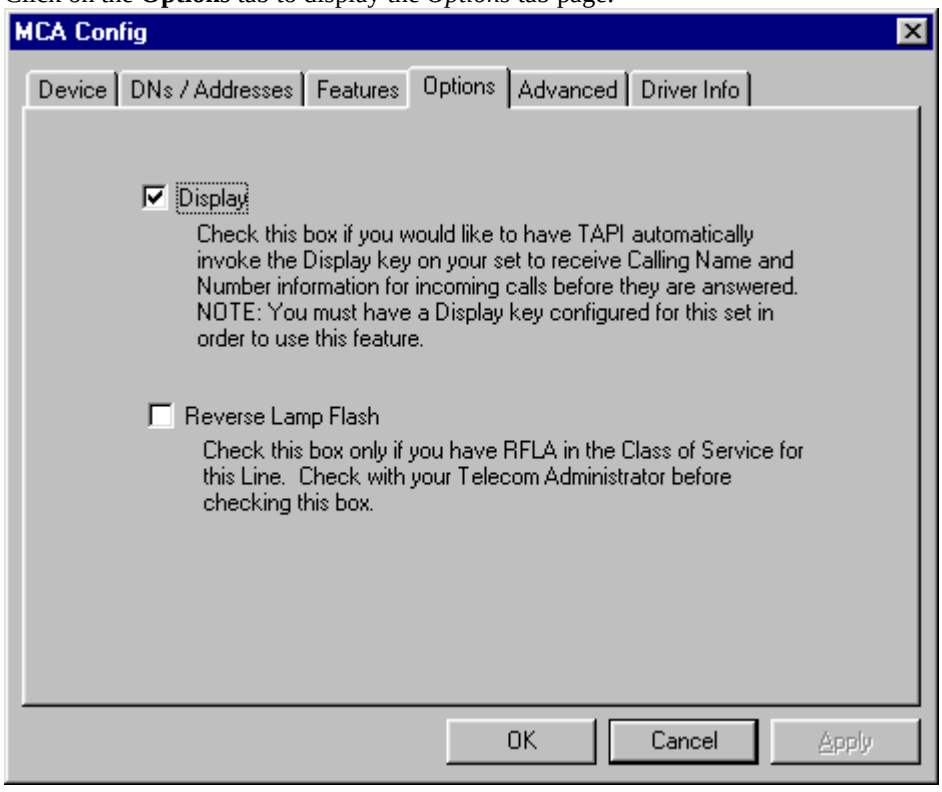


You have the capability to rename the device, but if you want to select a new COMM Port, you must first remove the device, then add a new one. If changes are made, you must exit the Control Panel and reenter or restart any TAPI applications that are running before the changes will take effect. Refer to the "Confirming the MCA Device is Setup Properly" section for additional information.

3. Click on the **Features** tab to display the list of supported features.
This is a "view only" dialog box.



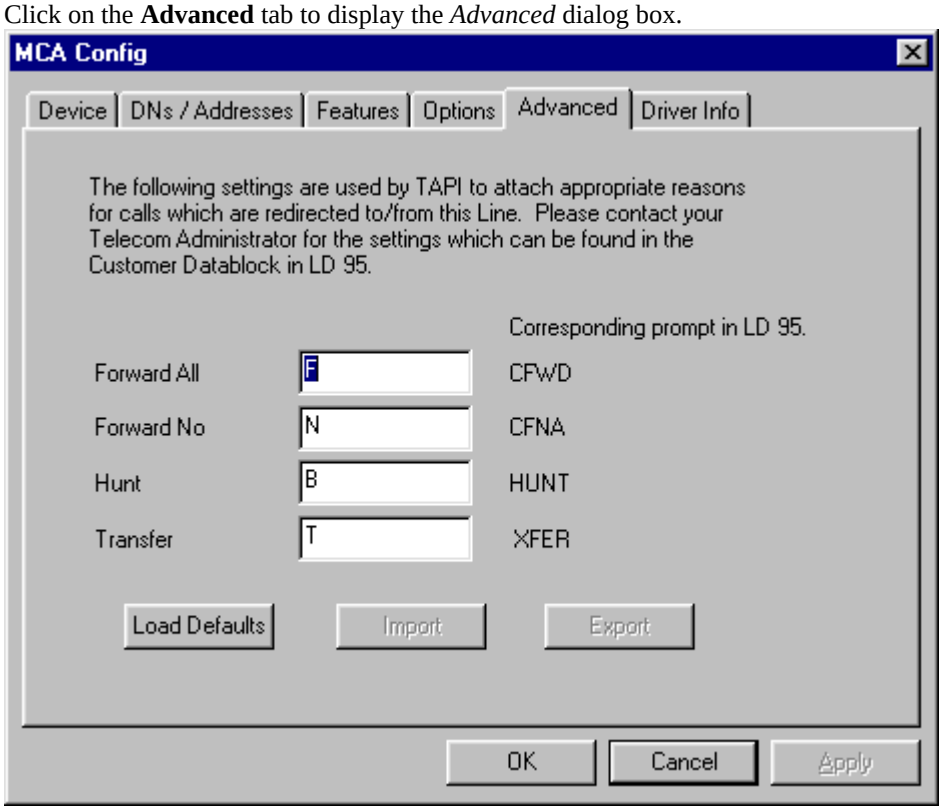
4. Click on the **Options** tab to display the *Options* tab page.



This dialog box allows you to select to have the Display key activated by the driver (when checked) or

activated by the user (when checkbox is blank).
The Reverse Lamp Flash is only applicable in the European markets.

5. Click on the **Advanced** tab to display the *Advanced* dialog box.



The *Advanced* page allows you to change the reason codes being used by the Meridian 1 PBX.

Note: These codes must match the information provided in Load 95 of the Meridian 1 switch otherwise the Caller ID and Called ID information may be displayed in your application incorrectly.

6. Click on the **Driver Info** tab to display the *Driver Info* dialog box.
This dialog box displays the version of the TAPI SP for MCA that is currently being used.

7. When changes are complete, click on the **OK** or the **Apply** button.
The following information box is displayed.

8. Click on the **OK** button.

Note: You must exit the Control Panel and reenter or start the TAPI application for the changes to take effect. Refer to the "Confirming the MCA Device is Setup Properly" section for additional information.

Chapter 5 Getting Results

By installing and configuring the MCA and the TAPI SP for MCA, you have Computer Telephony enabled your desktop. This chapter provides information on some of the applications that take advantage of the new telephony services that this gives you and that help you become even more productive than you already are.

Overview to the Desktop CTI Enabler

The following sections describe how you can use your new Symposium TAPI MCA to help you become more effective at completing your daily tasks. For example, after installing the MCA and the TAPI SP for MCA, you can setup and use:

- Applications that are part of your Windows Operating System, including the Phone Dialer that allows you to place calls directly from a speed dial list without having to touch your phone.
- The Phone Dialer telephony features of Microsoft's Outlook 97/98 and Microsoft Schedule+ to place calls directly from the Contacts List.
- Nortel TAPI applications such as Symposium Call Manager to manage your personal calls.
- TAPI Applications from Nortel's Business Affiliates or Symposium Partners and other vendors.

Using the Phone Dialer Application

The Phone Dialer is a simple TAPI Application that comes with all versions of Windows. It makes simple phone calls, speed dials, and outpulses digits.

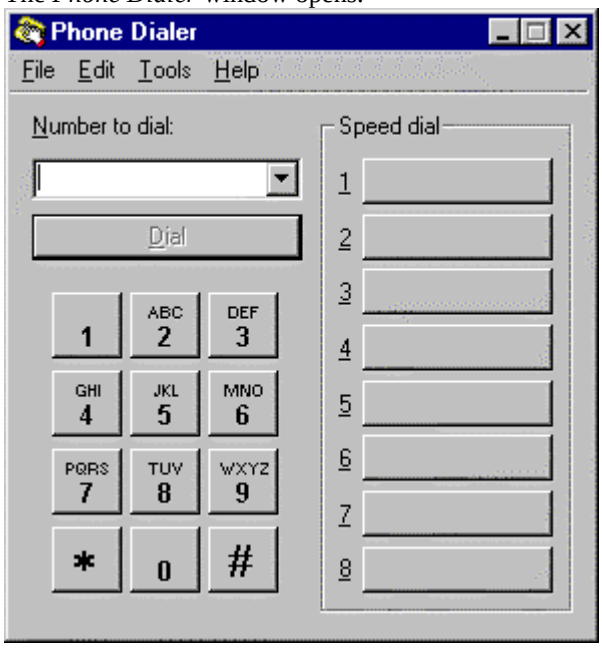
Setting up the Phone Dialer

Setting up the Phone Dialer Applications consists of accessing the Phone Dialer window and entering information on the *Connect Using* dialog box.

To Set up the Phone Dialer Application:

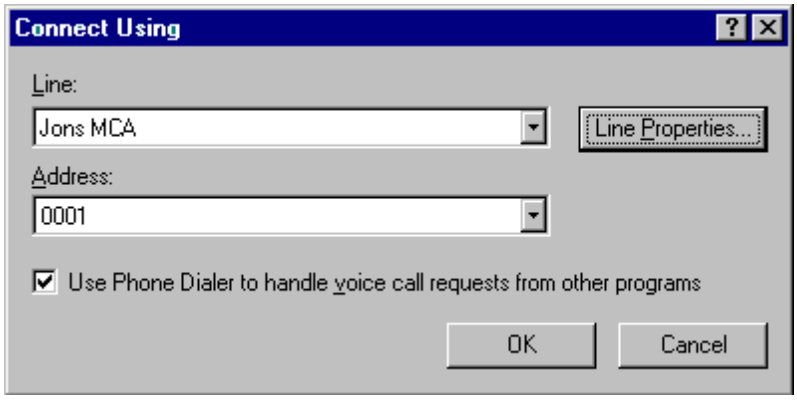
1. Click on **Start** button and go to **Programs** / **Accessories**.
2. Select **Phone Dialer**.

The *Phone Dialer* window opens.



3. Click on **Tools** and select the **Connect Using** option.

The *Connect Using* dialog box is displayed.



4. Click on the drop-down arrow located to the end of the *Line* field and select your line name.
5. Click **OK** to close the *Connect Using* dialog box and save the changes.

Using the Phone Dialer

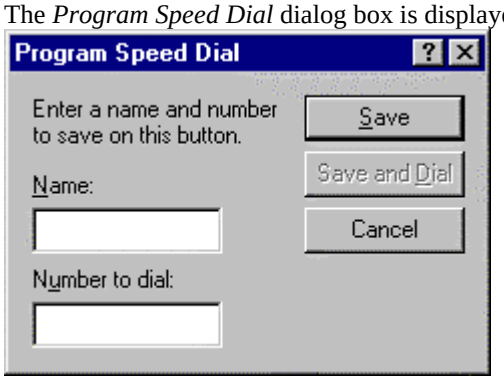
After setting up the Phone Dialog application, you are ready to make a call using the Phone Dialer and to configure the Speed dial button(s). The Speed dial buttons allow you to pre-program numbers, so that simply clicking on a button places the call.

To make a Call:

1. From the *Phone Dialog* dialog box, enter digits in the *Number to dial* field.
2. Click on the **Dial** button.
   The call is dialed.

To Configure a Speed Dial Button:

1. Click on the Speed dial button you wish to configure.
   The *Program Speed Dial* dialog box is displayed.



2. Enter a ***Name*** for the button in the *Name* field and the ***number associated with the name*** in the *Number to dial* field.
3. Click on the **Save** button to save the information.
   The information is displayed on the Phone Dialer window.
4. Program additional buttons by repeating steps 1-3.
   The configured buttons display the names you entered.

Additional information regarding this application can be found by clicking on the **Help** option located on the Menu bar.

Using the Phone Dialer Features of Outlook 97/98 and Microsoft Schedule+

Microsoft Outlook 97/98

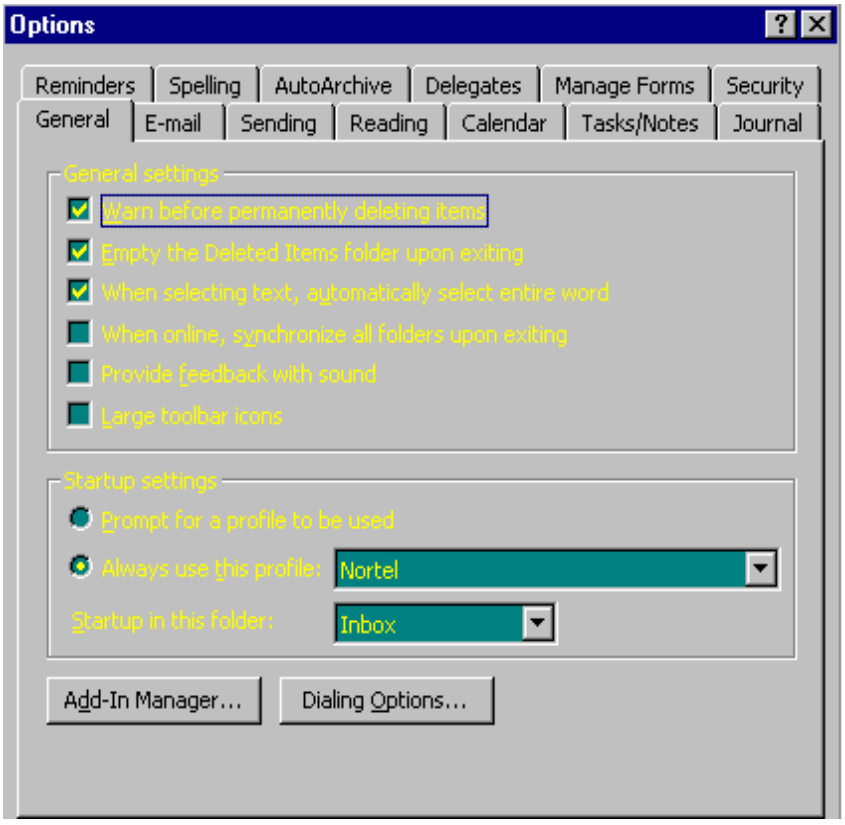
If you have Microsoft Outlook 97 version 8.02.4212 or above loaded on your machine, you can use it with the Symposium TAPI MCA. In addition, the Symposium TAPI MCA does not provide the Microsoft Outlook 97 software. This software is located on Microsoft's Web site.

The information presented here is for general purposes only and intended only as a guide in using Microsoft Outlook 97 with the Symposium TAPI MCA. For specific Microsoft Outlook 97 information, refer to Microsoft Outlook 97 user documentation.

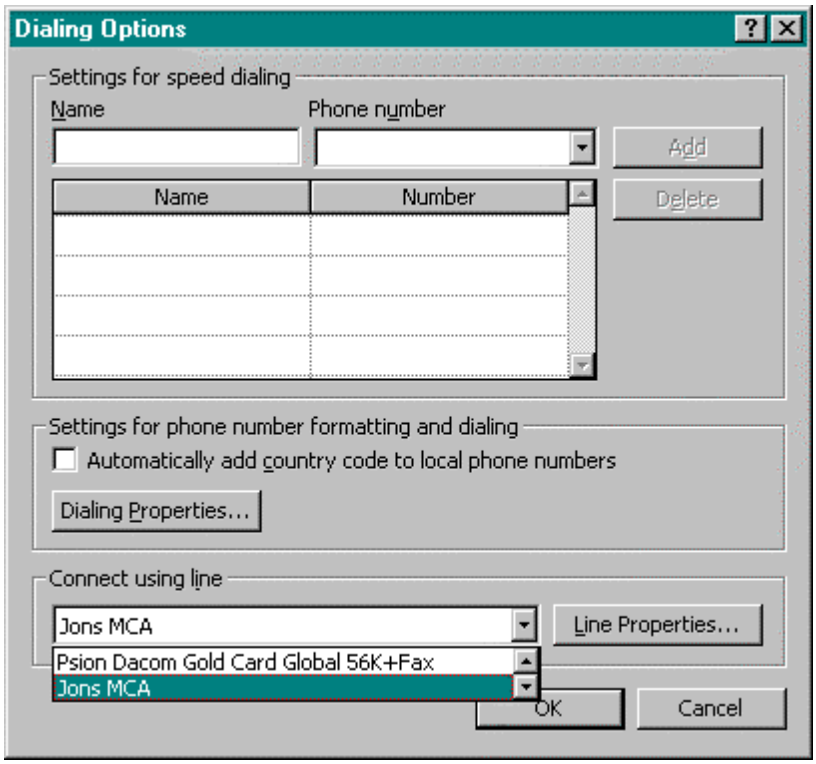
Setting up Outlook 97/98 to Allow Dialing from the Contacts List

To Setup Outlook 97/98:

1. Ensure the Symposium TAPI MCA software in installed, configured, and working and that Microsoft Outlook 97/98 is loaded on your machine.
2. From the *Contact* folder, go to the **Tools** menu and select **Option**.
   The *Options* dialog box is displayed.



3. Click on the **Dialing Option…** button.
   The *Dialing Options* dialog box is displayed.

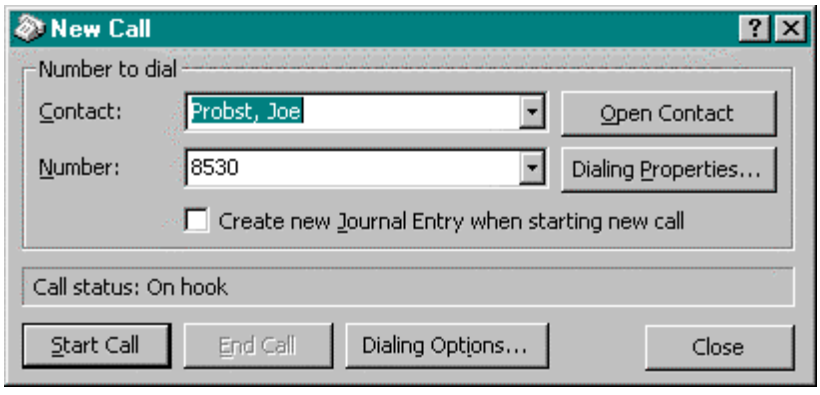


4. Click on the arrow located to the right of the *Connect using line* drop down list box to display the options.
5. Select your TAPI line instead of the modem.
6. Make any additional changes to the Dialing Properties as desired.
7. Click on the **OK** button to save the changes and close the *Dialing Options* dialog box.

Using Outlook 97/98 to Allow Dialing from the Contacts List

After setting up Microsoft Outlook 97/98, you can now dial from the Contacts.

1. Click on **Tools** located on the Menu bar and select the **Dial / New Call** option or right click on a Contact and use the autodialer.
2. Click on the **Start Call** button to place your call.



Using Nortel Symposium Call Manager Application

Nortel Symposium Call Manager provides call management from your PC with a Windows-based graphical user interface (GUI) that operates with the Symposium TAPI MCA. The call management options allow you to place and answer voice calls, put voice calls on hold, forward, or transfer calls, and redial a previous number. Setting the Call Manager preferences tailors the Call Manager features to suit your specific needs. In addition to call management, the Call Manager application provides access to the Call Log, Voice Mail, and Dialing Plans applications. The Call Manager application must be active for the Call Log application to log calls.

Accessing Call Manager opens the *Call Manager* window. The *Call Manager* window can be viewed in two different modes, expanded and collapsed. The expanded view displays the categories and members' names from the Directory application.

Call Manager also works in conjunction with the Directory application. Call Manager allows you to display the directory categories and members. New categories and members can be added, edited and deleted from the *Call Manager* window.

Setting the Call Manager Preferences

Setting the Call Manager preferences tailors the Call Manager features to suit your specific needs. Preferences are set on the *Settings* dialog box and include the following steps:

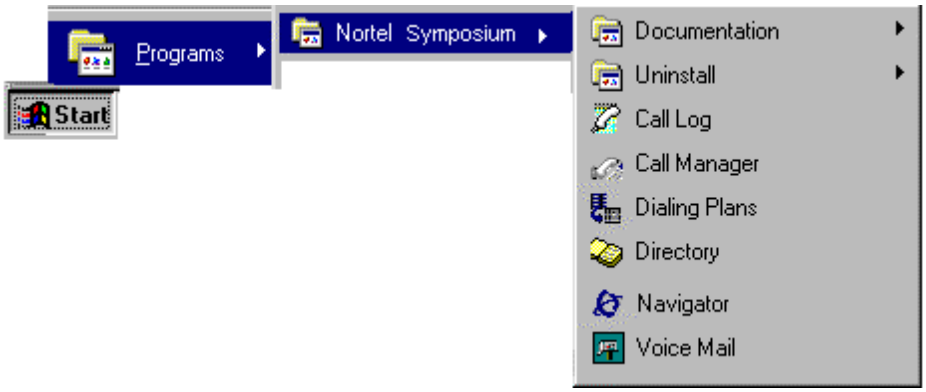
- Access the *Settings* dialog box.
- Set the General Settings
- Set the Sound Preferences
- Set the Incoming Preferences
- Set the Call Log Preferences
- Save the changes and close the *Setting* dialog box.

Selecting the **Settings** option on the **Tools** menu or selecting the **Settings...** icon  displays the *Settings* dialog box.

To Set the Call Manager Preferences:

1. Access the Call Manager application.

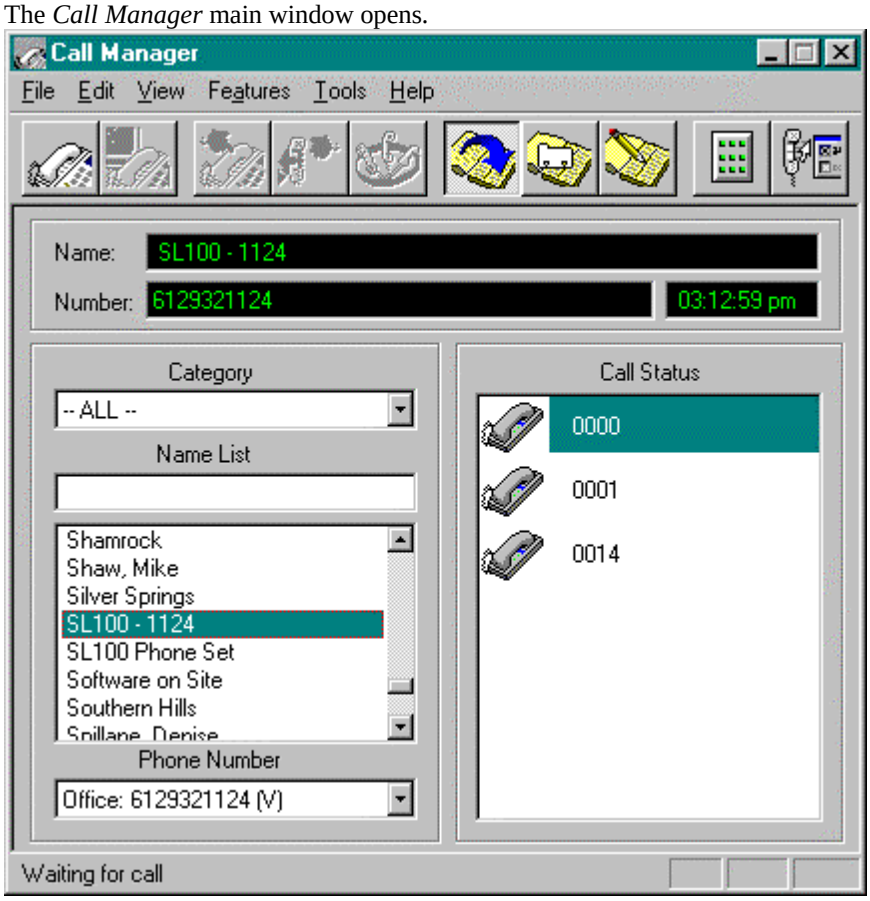
   a. Click on the **Start** button  , select **Programs/Nortel Symposium.**



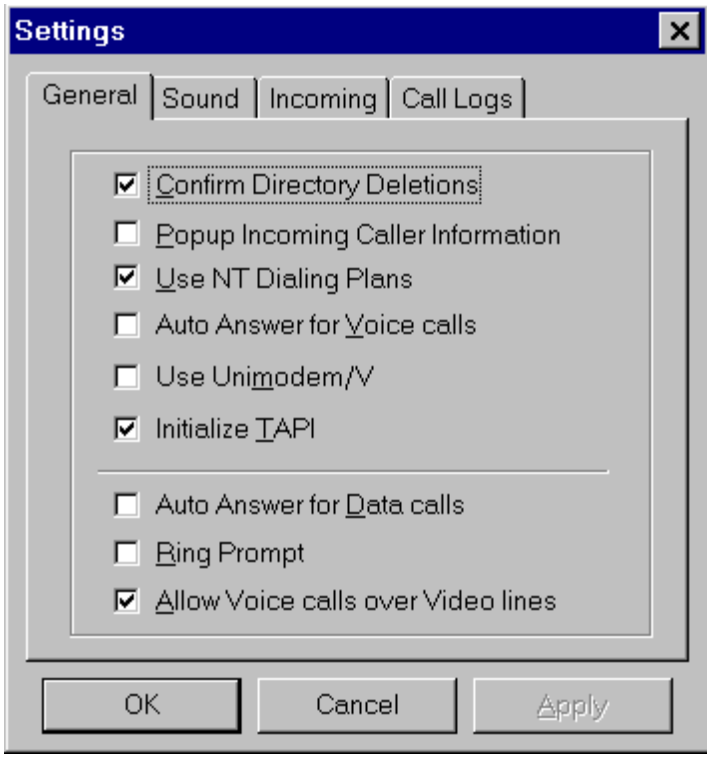
Note: The applications that are displayed on your desktop depend upon the installed Nortel Symposium products.

b. Select Call Manager.

The *Call Manager* main window opens.



2. Click on the **Setting** button  located on the Toolbar.
   Or
   Click on **Tools**, located on the Menu bar of the *Call Manager* window and select Settings.
   The *Settings* dialog box is displayed



Using Symposium Call Manager to Place a Call

To Place a Voice Call:

If you have not created your Directory database or created a Dialing Plan for your location:

Type the number exactly as it is to be dialed in the *Number* field.

Call Manager dials the number contained in the *Number* field.

Or

Click on the *Dial keypad* icon  on the toolbar bar. The Keypad is displayed. Click on the numbers to place the call.

If you have created your Directory database and created a Dialing Plan for your location:

1. Ensure the correct dialing plan is active. (Access the Dialing Plan application and select the dialing plan created for your location.)
2. Select the member you wish to call.
   a. Expand the *Call Manager* window, if necessary by clicking on the Directory icon.
   b. Select the Category that contains the name of the person you want to call by clicking on it.
   c. Select the name of the person in the *Members* listbox to call by clicking on it.
   The *Name* and *Number* fields display the selected name and telephone number. The selected name is highlighted in the *Name* listbox.
3. Double-click on the highlighted name.
   Or
   Click on the **Telephone** icon located on the Toolbar.
   Or
   Double-click on the telephone icon, located in the *Call Status* area, that represents the line you want to

use to place an outgoing call.
Or
Click on **Features** located on the Menu bar.
The **Features** menu is displayed. Click on **Call**.

Call Manager dials the number contained in the *Number* field.

Using the Call Log

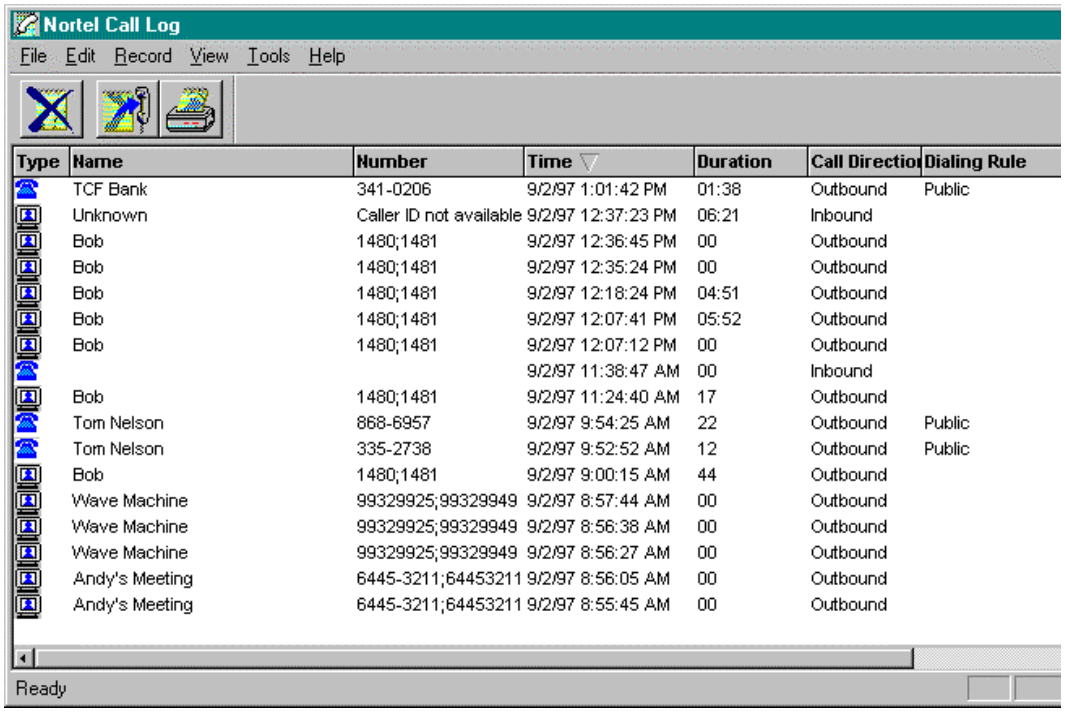
The Call Log application is provided with Nortel Symposium Call Manager and keeps a log of all incoming and outgoing voice calls according to the preferences you set. Setting the Call Log preferences logs the type of calls you desire.

Accessing the Call Log application does not automatically log your calls. The Call Manager application must be active for your calls to be logged by the Call Log application. Once the Call Manager is running, accessing the Call Log application from the Navigator, from the **Nortel Symposium** program group, or from the Call Manager application launches the Call Log application. Placing a call from the *Call Manager* window launches the Call Log application.

However, the *Call Log* window does not open until the **Call Log** option on the Call Manager **Tools** menu is selected.

Placing a Call from the Call Log

To Place a Call from the Call Log:

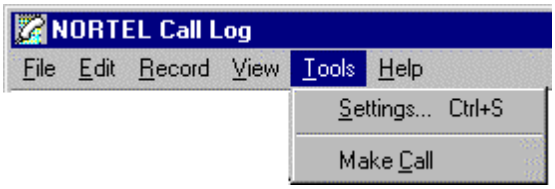


1. Access the Call Log by selecting the **Call Log** option on the on the Call Manager **Tools** menu . The *Call Log* window opens.

2. Double-click on the entry (line) containing the number you wish to call.
   Or
   Click on the entry (line) containing the number you wish to call to select it.

   Click on the **Make a Call button**  located on the Toolbar.
   Or
   Click on **Tools** located on the Menu bar.

   The **Tools** menu displays the menu options.



   Click on the **Make Call** option.

The selected entry number is dialed.

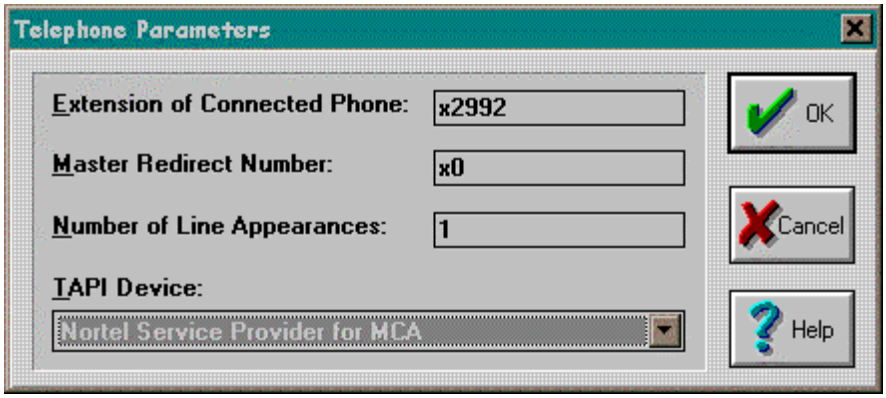
Using the FastView 1.6 Application

FastView 1.6 is another TAPI Application available from Nortel Networks that is intended for use primarily in Call Centers and Help desks. FastView allows you place outbound calls, answer incoming calls, and hold, unhold, transfer and conference calls. It provides a screen pop on the CLID or DNIS of an incoming call quickly and without user intervention.

Setting up FastView 1.6

To Set up FastView 1.6 to use the Symposium TAPI MCA:

1. Start FastView Administration to display the main window.
2. Click on the Configure dragdown and select **Telephone Parameters**.
   The *Telephony Parameters* dialog box is displayed.
3. Select **Nortel Service Provider for MCA** in the TAPI Device drop-down box.

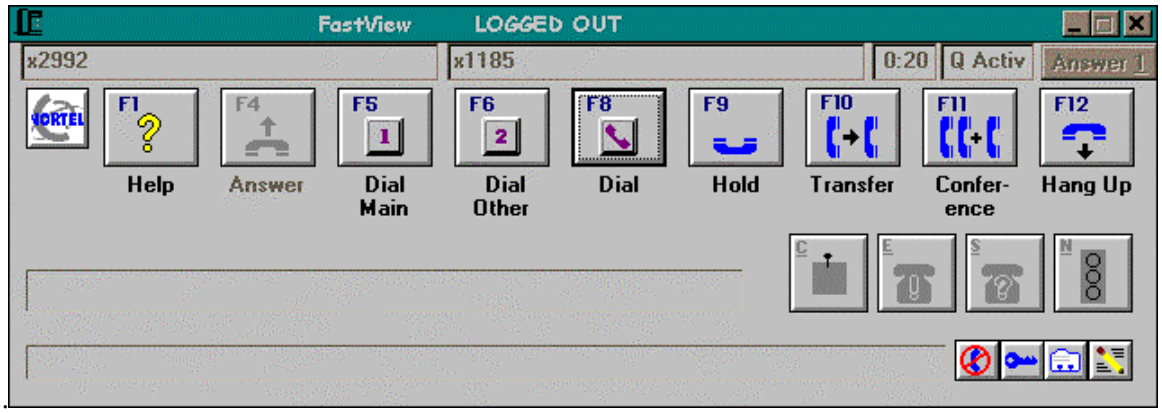


Using FastView 1.6

You can use FastView to do call control using simple User Interface buttons.

Note: Login / Logout / ACD Ready and Not Ready are not supported at this time.

The features of FastView used with the Symposium TAPI MCA include the following: Make Call, Answer Call, Hold, Unhold, Transfer, and Conference as demonstrated with the FastView user interface below



Using Other TAPI Applications

Your new Symposium TAPI MCA supports many TAPI Applications. The following section lists some that have been tested and highlights the key tasks to perform with each application that will help you in becoming more effective at performing your daily tasks.

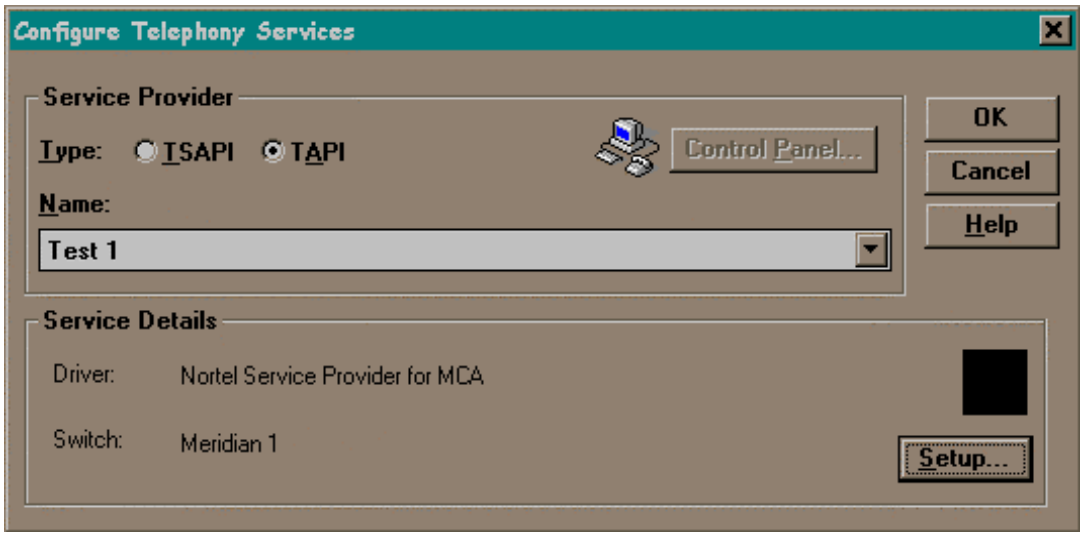
Using the ActiveVoice PhoneMax 2.0 Application

PhoneMax is Active Voice's first standalone telephony product. It gives TAPI users complete control over all telephone activity right from their PC! With an integrated Call Log and PIM (Personal Information Manager), it also enables you to use information from personal databases and other applications with every call.

Setting up PhoneMax 2.0

To Setup PhoneMax 2.0 to be used with the Symposium TAPI MCA:

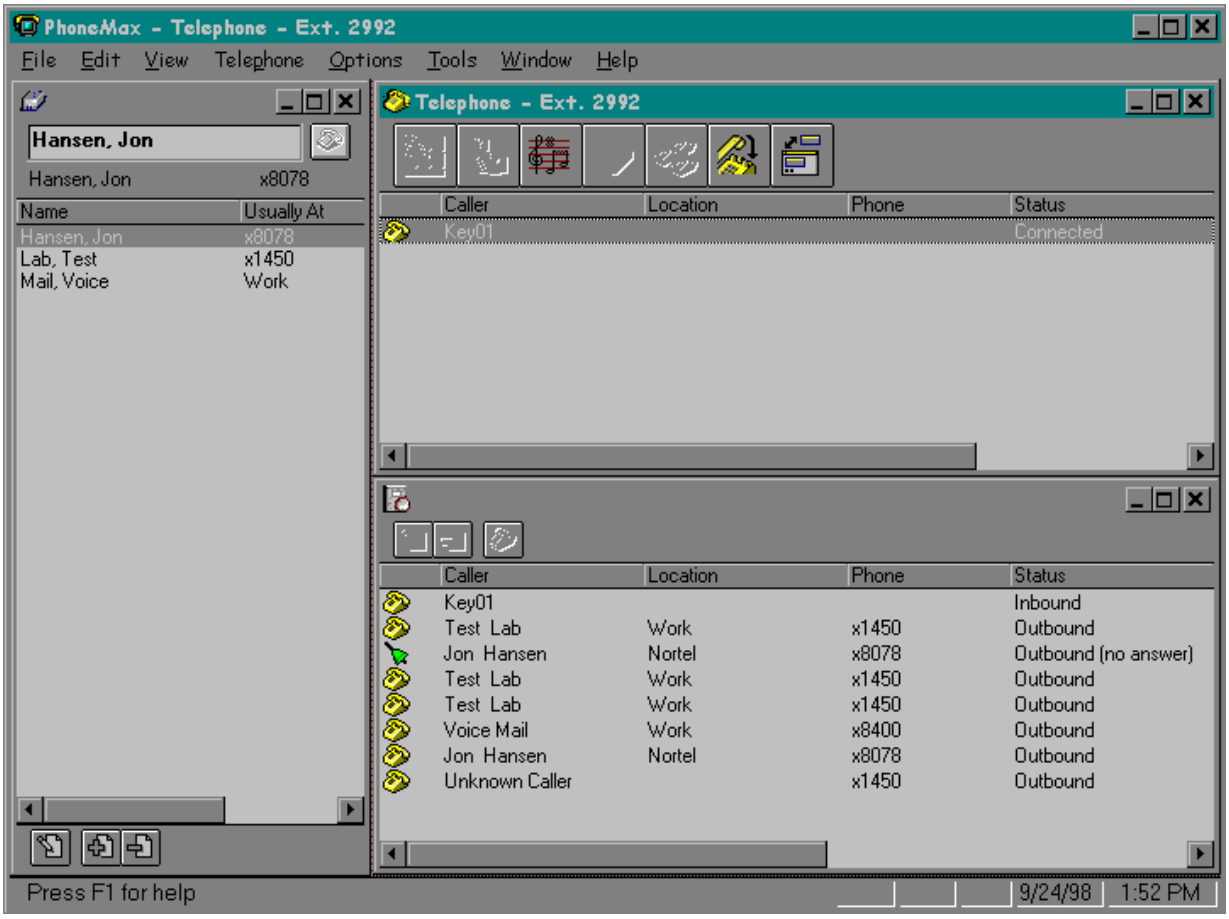
1. After starting the PhoneMax Application, click on the **Setup** button on the active window.
2. Click on the **TAPI** radio button
3. Use the down arrow located to the right of the *Name* field and select your TAPI Line Name.



4. Click **OK** two times to save the changes and close the dialog box.

Using PhoneMax 2.0

The figure below shows a sample user interface for the PhoneMax 2.0 application. Refer to the PhoneMax 2.0 User Guide for details.



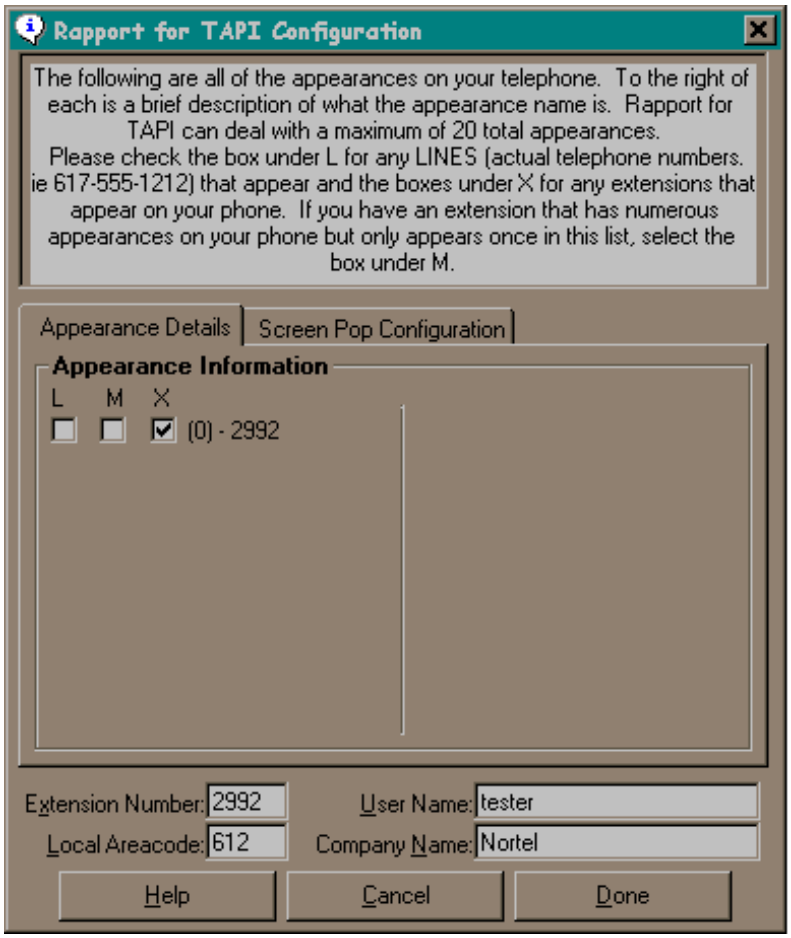
Using the Revolution Rapport for TAPI Application

Rapport for TAPI is a revolutionary Desktop Telephony Interface designed to seamlessly integrate telephony control into the users 32 bit desktop environment. Rapport allows you to control your telephone activity directly from your PC while leaving you in control at all times. Highlights of this application are: Call Control (answer, hold, transfer, unhold, conference), Integrates with your existing applications, Telephony Enable your entire Windows Environment, Hotkey Control, Caller ID integration, Non-intrusive call handling metaphor, Revolutionary interface

Setting up Rapport

To Set Up Rapport to be Used with your Symposium TAPI MCA:

Refer to the Rapport for TAPI User Guide for procedures on how to configure which line appearances you want the application to control.



Using the Algo Communications PC Phone Application

The figure below shows another type of user interface you might like that can be used with the Symposium TAPI MCA. Refer to the PC Phone User Guide for procedures on how to configure the line appearances you want the application to control.

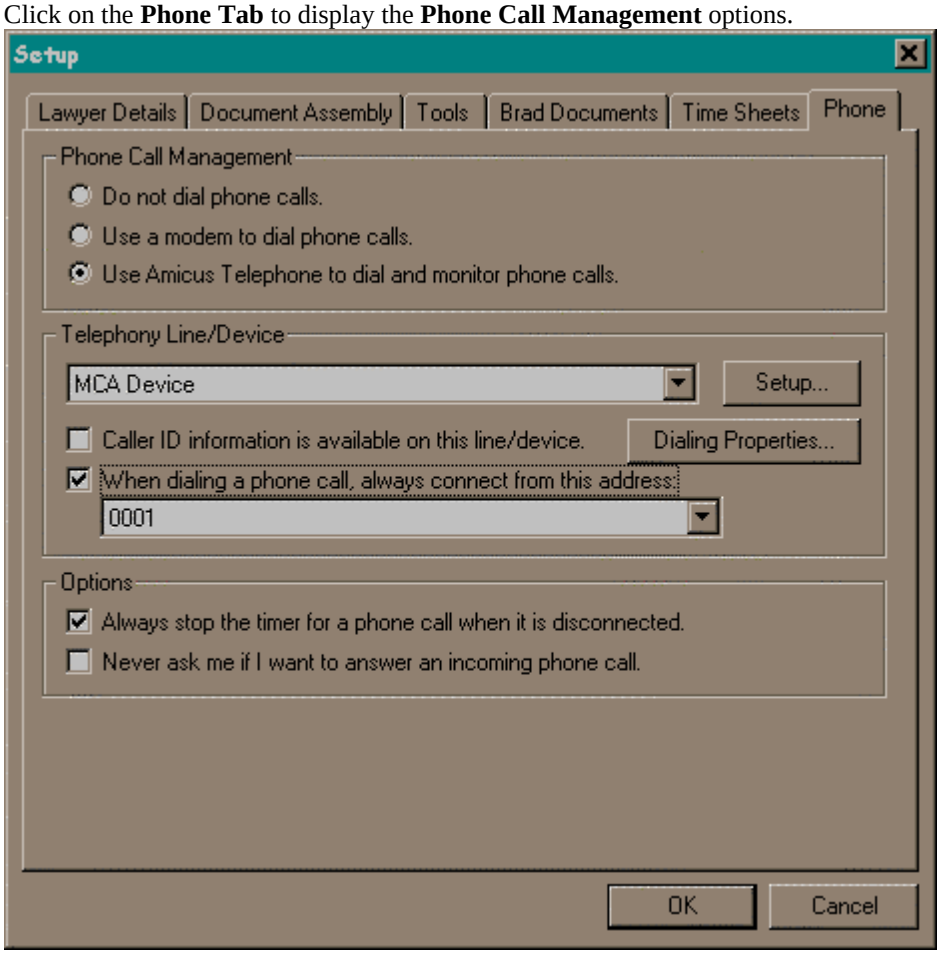
Using the Amicus Attorney 3.0 Application

Amicus Attorney is a TAPI application designed for Law offices to make calls, answer calls, hold and unhold calls, outpulse digits, time calls, and log calls.

Setting up Amicus Attorney

To Setup Amicus Attorney to be used with your Symposium TAPI MCA:

1. Access the *Amicus Attorney* main window.
2. Click on **File** and select **Setup**.
3. Click on the **Phone Tab** to display the **Phone Call Management** options.



4. Setup your Telephony Line/Device and address.
5. Click on the **OK** button.

Using Amicus Attorney

To Use Amicus Attorney:

1. From the main window, click on the **Phone** icon in the lower right corner of the window.
2. Either select an address entry or enter a new number in the *Phone* field.

3. Click on the **Phone** icon to make a call.

   You can use the **Stop / Clock** icon to time the call.

To view the log:

Click on **Show Log** button.

Chapter 6 Troubleshooting Tips

This chapter provides information for additional installation acceptance testing using the JulMar TAPI Phone Dialer tool and for running the Logger Tool. In addition, it also describes possible problems and the actions to resolve these problems.

MCA Troubleshooting

MCA does not Operate at All

1. Check the LED in the back of the telephone to see if it is flashing. If the LED is steadily lit, the MCA needs to be configured in your system, or it may be bad. If the LED is not lit, the MCA requires external power.
2. Make sure the cable from your terminal or PC is connected to the MCA.
3. Check the data parameters for your display.
4. Be sure the transformer is plugged in, or the closet power is connected.
5. Be sure the cable between the MCA and your telephone is connected and has not been pinched.
6. Be sure the power card is installed correctly. Verify the jumper settings are correct for either RS-232 or V.35 (whichever you are using).

If the problem persists, you may need to troubleshoot your telephone. Refer to *Meridian Modular Telephones description* (553-2201-116) or *Telephone and attendant console installation* (553-3001-215).

Notes: If pseudo random pattern 511 data is sent in idle mode (when there is no active call), telephone keypad dialing is inoperative. Stop sending the data from the DTE.

If using an RS-232 cable to connect the MCA to an ADM3/5 terminal, be sure pin 22 is disconnected.

Change the baud rate before you change the mode from synchronous to asynchronous.

Some terminals may drop DTR with the break. If this happens, RELEASED is not displayed.

Program Auto Dial before VLL is selected.

The answering side's data module always adapts to the calling side's data module parameters. The calling side's data module never adapts to the answering side's data module parameters.

Modem pooling

No modem pooling is supported in synchronous mode.

Power failure

When a call is connected between two MCAs, power failure or removing the power from one MCA does not release the call until the power is restored.

The MCA always retains the previous data parameters. There is no resetting required in the case of power failure.

After the call is connected send the data using bit error rate testers (BERT). If there is no transmission or if there are excessive errors, the MCA is probably defective. Return it for repair.

Verifying the TAPI SP for MCA is Installed and Configured Properly

The JulMar TAPI Phone Dialer tool is provided to assist you in verifying that the TAPI SP for MCA is properly installed and configured. Alternately, Microsoft "Dialer" application provided with Windows 95, can also be used to dial a call and verify that the TAPI SP for MCA is up and running.

Note: If you are having problems, you may be instructed to run the TAPI Logger program while using the JulMar TAPI Phone Dialer tool. The "Logger Troubleshooting Tool" section provides information on running the TAPI Logger program. However, do not run the TAPI Logger program unless instructed to by Nortel's TAPI Support Personnel.

Using the JulMar TAPI Phone Dialer

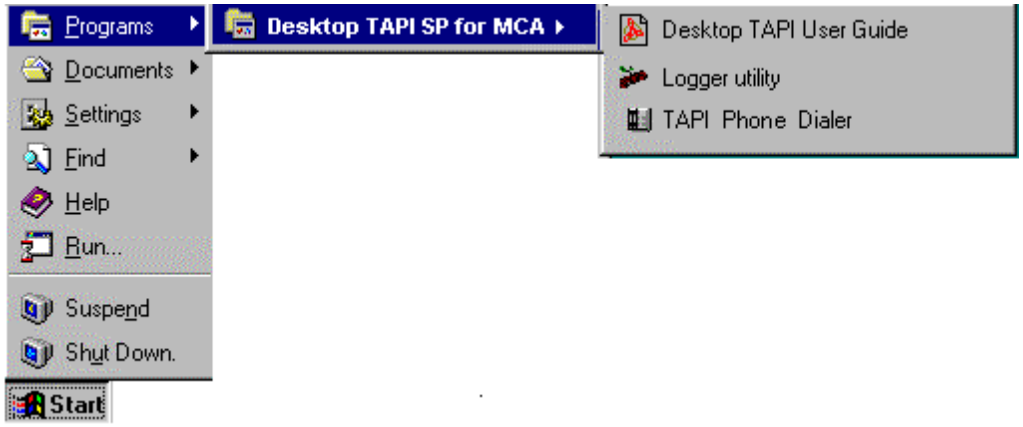
The TAPI Phone Dialer program from JulMar Technology Inc. is installed on your PC when you install the TAPI SP for MCA version 2.0 software (unless you selected the **Compact** installation option). This program allows you to verify that the installation and configuration steps have been completed properly and determine whether your PC is ready to support your Computer Telephony (TAPI 2.x compliant) application. The **TAPI Phone Dialer Program** icon is located in the **Desktop TAPI SP for MCA** program group.

Note: The JulMar TAPI Phone Dialer is provided to Nortel Networks by JulMar, Inc. Information and product updates on the TAPI Phone Dialer are provided on the JulMar web site (www.JulMar.com).

Running the TAPI Phone Dialer program allows you to answer, make, and drop calls, to place calls on hold and take them off hold, and to transfer and conference calls using the same methods your TAPI applications use. The call information is displayed in fields and is useful when dealing with customer support. The procedures below describe how to use the TAPI Phone Dialer.

To Use the TAPI Phone Dialer to verify the operation of the TAPI SP for MCA version 2.0:

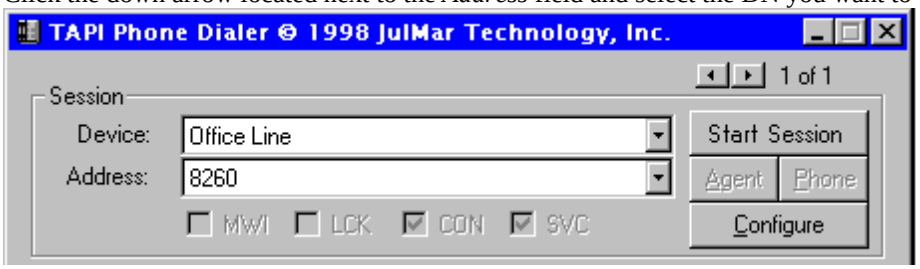
1. Click on the **Start** button and select **Programs**\. **Desktop TAPI SP for MCA.**



2. Select the **TAPI Phone Dialer** program.
The *TAPI Phone Dialer* program window opens.

3. Click on the down arrow located next to the *Device* field and select the MCA device configured above.

4. Click the down arrow located next to the *Address* field and select the DN you want to control/monitor.



5. Click on the **Start Session**  button.

6. Enter a ***dialable number*** in the *Phone #* field and click on the **Make Call** button.

Your phone should go off-hook and dial the number automatically.

7. After the far end answers, click on the **Hold** button. The call is put on hold and the indicator beside the DN on the set is flashing.
8. Click on the **Unhold** button. The call is taken off hold and the indicator beside the DN key on the set lights steady.
9. Click on the **Hangup** button. The call will be disconnected.
10. From another telephone, place a call to your DN. While the phone is ringing and after you answer the call by clicking the **Answer** button, verify that the information is correct in the following fields: *Call State, Call Type, Call Direction, Caller ID, Called ID, Connected ID,* and *Redirecting ID.*

Note: The buttons are only available if you are able to perform the task from the set and the TAPI SP for MCA supports the feature. You are now ready to install , configure, and use your CTI Applications.

---

11. Click on the **End Session**  button to close the *TAPI Phone Dialer* program window.

Logger Troubleshooting Tool

During installation or while running an application, problems may occur that cannot be easily found through normal running of the application. The Nortel Logger troubleshooting tool logs messages from the TAPI Service Provider to assist in troubleshooting purposes. To provide maximum help with troubleshooting, the Nortel Logger provides message filtering functionality to determine which messages from the TAPI Service Provider are displayed. This tool also allows you to assign different colors to the messages to enhance the message presentation in the *Nortel Logger 32* window. Accessing the Nortel Logger Troubleshooting Tool opens the *Nortel Logger 32* window.

Note: You must setup the message filter parameters to determine how the logging messages are displayed before the Nortel Logger will log the messages.

Setting up the message filter parameters consists of the following steps:

- Set up the Message Filter to display only the selected messages.
- Select and assign a color to each message type.

After the message filter parameters are set, the Nortel Logger logs messages to the display area on the *Nortel Logger 32* window according to the parameters you set. When the *Nortel Logger 32* window becomes full, the messages are written to the Overflow file. The Nortel Logger troubleshooting tool allows you to change the Overflow file setup defaults. Selecting **Options** located on the **Settings** menu displays the *Options* dialog box. This dialog box provides fields to change the default Overflow file name, the pipe name, the maximum number of displayed lines on the *Nortel Logger 32* window, and the size of the Overflow file.

If you want to *Nortel Logger 32* window to occupy the topmost position on your desktop, the Nortel Logger provides the option to keep the *Nortel Logger 32* window on the top position on your desktop.

After setting up the message filter parameters, the messages from the TAPI Service Provider are logged.

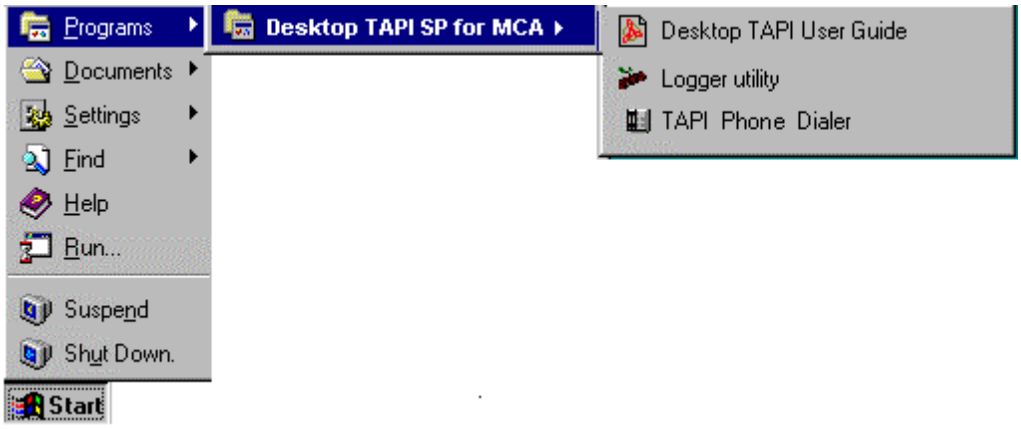
The Nortel Logger tool allows you to perform the following tasks:

- Save the Nortel Logger display window's content in an .RTF or .TXT file.
- Append the Nortel Logger display window's current content to the Overflow file and clear the window.
- Clear the Overflow file.
- Print the Nortel Logger display window's content.
- Close the current display window and open a new one.
- Open an existing file and display it in the Nortel Logger display window.
- Search for a particular string in the information displayed in the *Nortel Logger* display window.

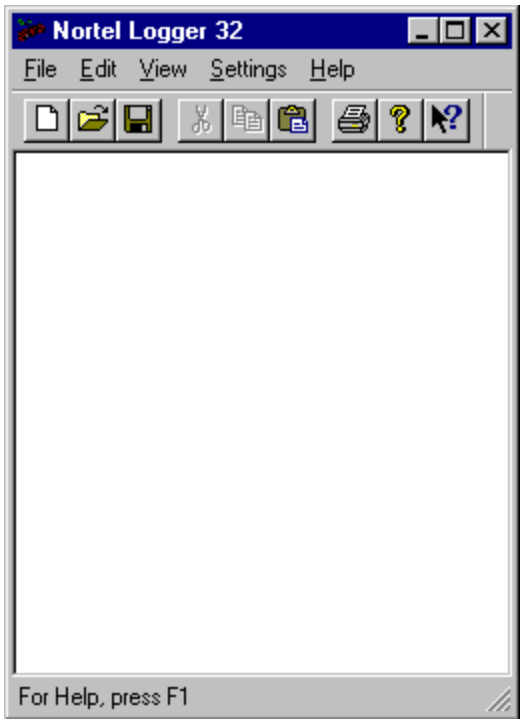
Launching the Logger Troubleshooting Tool

Note: Run this application only when requested to by the Desktop TAPI SP technical personnel.

The Logger Troubleshooting Tool is launched by clicking on the **Start** button, selecting Programs, then selecting **Desktop TAPI SP for MCA** program group, and choosing **Logger Utility**.

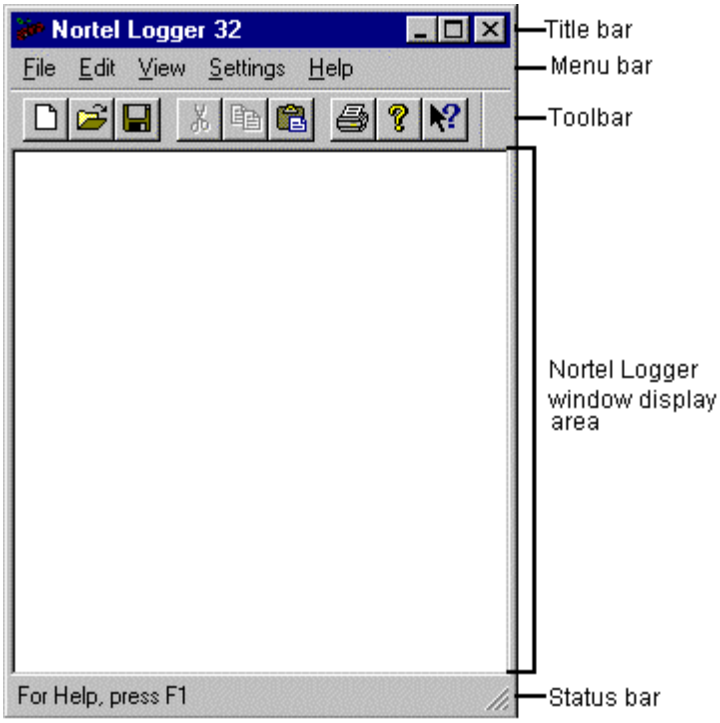


Launching the Logger Troubleshooting Tool opens the main Logger window. After launching the Logger, starting a TAPI application, such as the JulMar TAPI Phone Dialer tool, displays information in the *Nortel Logger 32* window.



Overview of the *Nortel Logger 32* Window

The Nortel Logger Troubleshooting tool provides an easy to use Windows-based interface that is similar to other Windows-based applications. The *Nortel Logger 32* window contains the following window elements:



Nortel Logger 32 Window *Menu Options*

The Nortel Logger window provides the following Menu options:

Menu	Description
File	Provides options for working with the message information.
Edit	Provides standard windows editing options for working with the message information in the window display area and provides a search feature for searching for a particular message.
View	Provides viewing options for displaying or hiding the Toolbar and Status bar.
Settings	Provides options for setting up the Overflow preferences and the message filter parameters.
Help	Provides information about the Nortel Logger Troubleshooting tool.

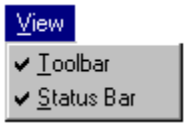
File Menu

Option	Description
New	Allows you to close the current display window and open a new one. If the current display window is not empty, the Nortel Logger prompts you to save its content, which will be cleared after the new display window is opened.
Open	Allows you to open an existing file and display it in the Nortel Logger display window. There are two types of file formats used by the Nortel Logger: RTF and TEXT. Files with "rtf" are opened as rich text edit format files to take full advantage of RTF. Other files are open as text files.
Save	Allows you to save the current Nortel Logger display window's content to the currently opened file. If the content is from a new file, the Nortel Logger prompts you for a file name.
Save As	Saves the current content of the Nortel Logger display window to a file. The Nortel Logger prompts you for a file name. There are two file formats used by the logger: RTF and TEXT. If the given file name has an extension as "rtf", the file will be saved as rich text edit format file. Otherwise the file is saved as plain text file. ***Note:*** Both **Save** and **Save As** commands only save the current content in the Nortel Logger display window.
Append to overflow	Appends the current content of the Nortel Logger display window to the overflow file and clears the display window.
Clear overflow file	Clears the overflow file.
Print	Prints the current content of the Nortel Logger display window
Print Setup	Displays the *Print Setup* dialog box for changing the printing parameters
Exit	Closes the *Nortel Logger 32* window and exits the Nortel Logger Troubleshooting tool

Edit Menu

Option	Description
Undo	Allows you to undo the previous editing.
Cut	Cuts the current selection in the Nortel Logger display window and puts it on the clipboard.
Copy	Copies the current selection onto the clipboard.
Paste	Pastes the current clipboard content into the Nortel Logger display window starting with the mouse button cursor location.
Select All	Selects all of the information content in the Nortel Logger display window.
Clear All	Clears all of the information content in the Nortel Logger display window.
Find	Displays the *Find* dialog box that allows you to search for a given string in the Nortel Logger display window. (Refer to the "Searching for a Particular String in the Logger Display Window" section for more information.)
Find Next	Searches for the next string, which is specified by the previous **Find** command, in the Nortel Logger display window
Replace	Replaces a found string with a given string as entered on the *Replace* dialog box.

View Menu

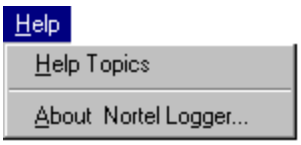


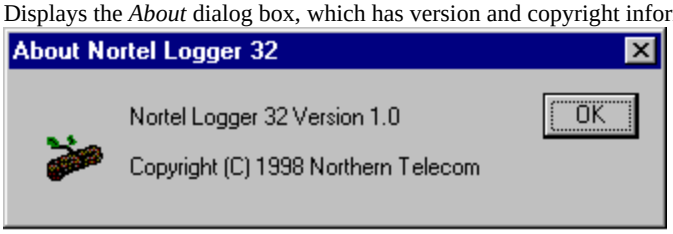
Option	Description
Toolbar	Toggles the Toolbar display.
Status Bar	Toggles the Status bar display

Settings Menu

Option	Description
Options	Provides the option to set up the overflow file name, the named pipe's name string used by the Nortel Logger, the maximum line number displayed in the Nortel Logger display window, the maximum size of the overflow file, and to select to have the *Nortel Logger 32* window on top.
Filter	Provides the capability to set up the message filter to display only the selected messages.

Help Menu

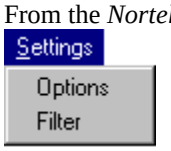


Option	Description
Help Topics	Provides access to the on line help.
About Nortel Logger	Displays the *About* dialog box, which has version and copyright information. 

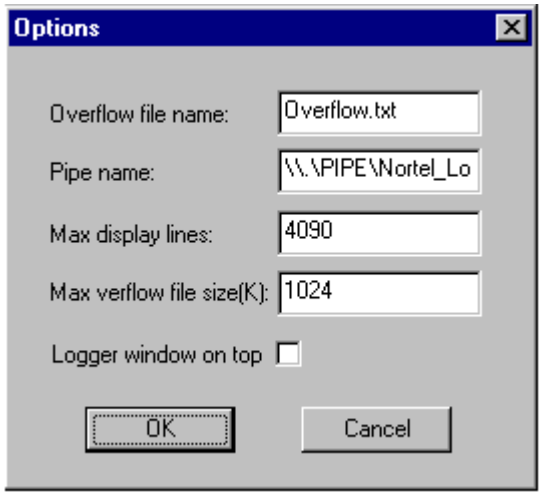
Changing the Topmost Position of the Nortel Logger 32 Window

The *Options* dialog box provides the option to keep the *Nortel Logger 32* window in the topmost position on your desktop.

To Have the Nortel Logger 32 window Always on Top

1. From the *Nortel Logger 32* window, click on **Settings** to display the **Settings** menu options.
   

2. Click on the **Options** option.
   The *Options* dialog box is displayed.



3. Click in the **Logger window on top** check box.
   A check mark in the check box means the option is selected and the *Nortel Logger 32* window now occupies the topmost position on your desktop.

Setting Up the Parameters for the Message Filter

Setting up the message filter parameters consists of accessing the *Nortel Logger* window, setting up the Message Filter to display only the selected messages, selecting and assigning a color to each message type, and setting up the Overflow file name and properties. Nortel Logger writes to the Overflow file when the number of lines in the *Nortel Logger 32* window reaches the user defined limit.

After setting up the message filter parameters, accessing the Nortel Logger opens the *Nortel Logger 32* window with the logging messages from the TAPI Service Provider are displayed according to the parameters you set.

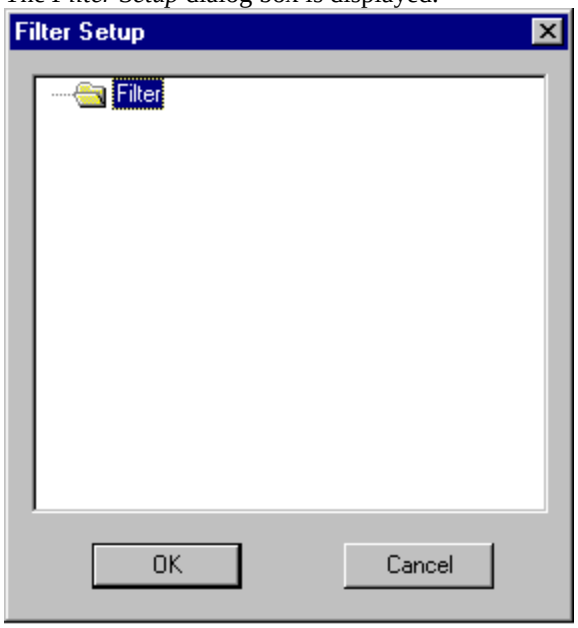
Setting up the Message Filter

The message filter is required to be set up so that the desired message can be displayed on the Nortel Logger display window. Setting up the Message Filter consists of accessing the *Filter Setup* dialog box, adding the categories, and adding message types to each category. After creating the categories with message types, you have the option to assign a color to each message type.

To Access the Filter Setup Dialog Box:

1. From the *Nortel Logger 32* window, click on **Settings** to display the **Settings** menu options.

2. Click on the **Filter** option.
   The *Filter Setup* dialog box is displayed.



To Add the Message Categories:

1. Right mouse click in the *Filter Setup* dialog box to display the menu options.

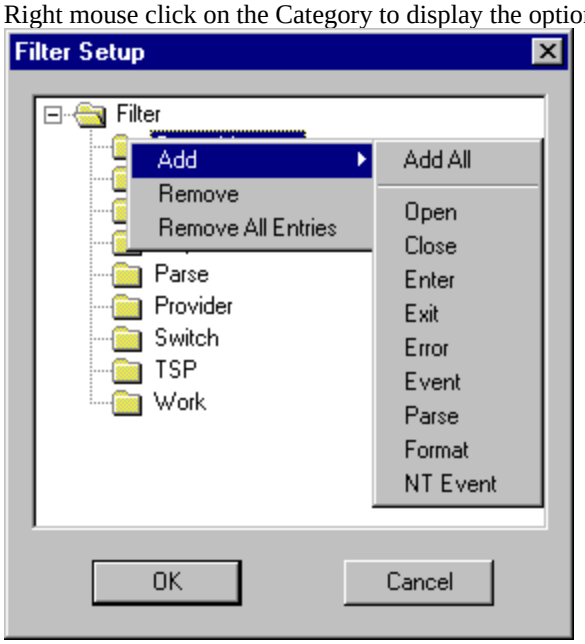
2. Select the **Add All** option to add all available categories.
   Or
   Click on the Category you wish to add.

   Note: Select all COMM Manager filters if you suspect problems between the MCA and the PC. Select all Line filters to view the messages generated from the TAPI applications for the line. Select all Phone filters to view all messages generat4ed from the TAPI applications for the line addresses or DN

   The Selected Categories display on the *Filter Setup* dialog box.

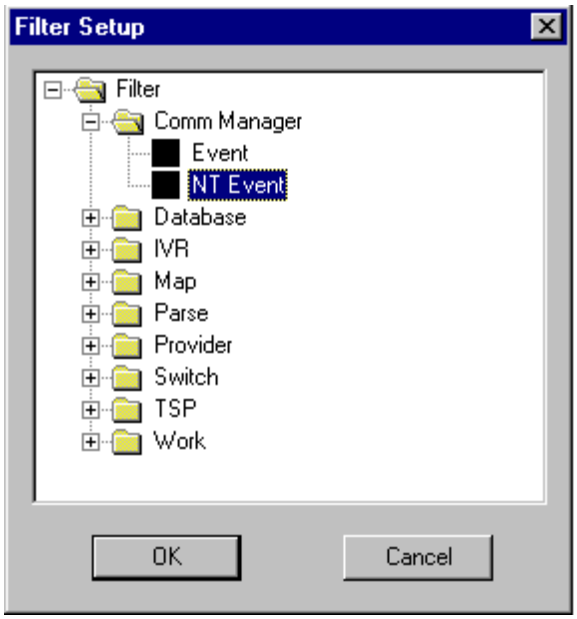
To Add the Message Types to Each Category:

1. Right mouse click on the Category to display the options.



2. Select the **Add All** option to add all entries.
   Or
   Click on the message type to select a single message type entry item.

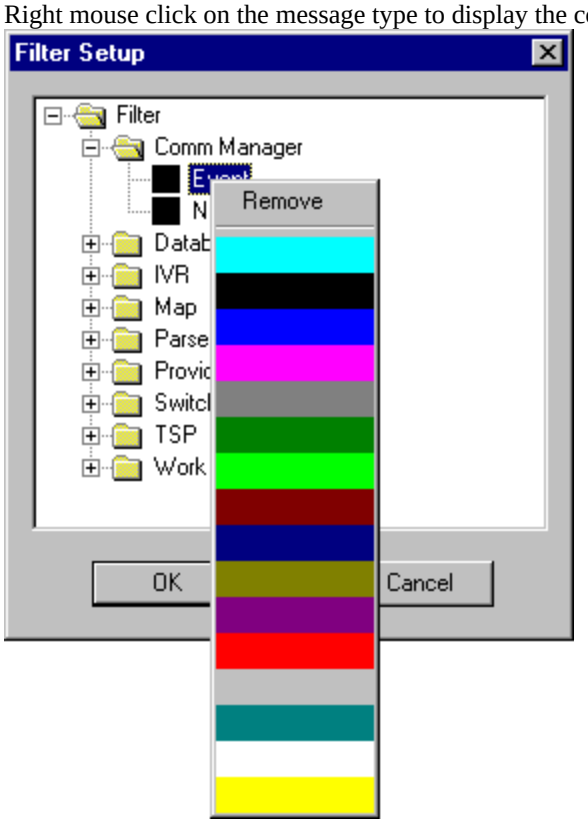
The selected message type entry items are displayed under the selected category on the *Filter Setup* dialog box.



Assigning Colors to Message Type

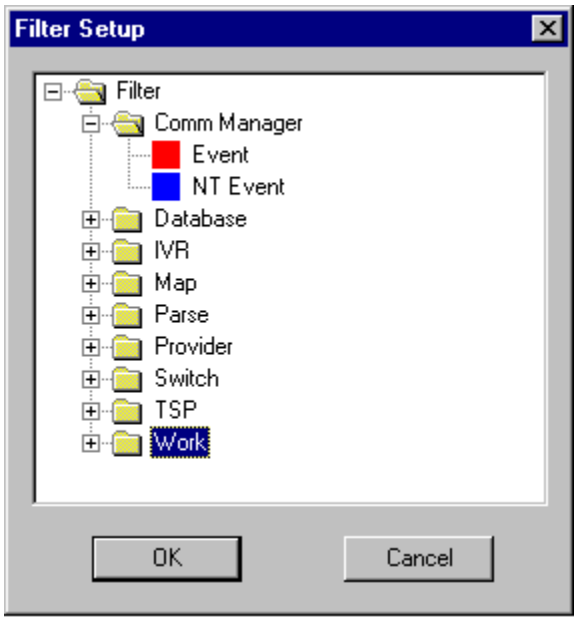
To Select and Assign a Color to Each Message Type:

1. Right mouse click on the message type to display the color options.



2. Click on the color to select it.
3. Repeat steps 1 and 2 until all message types have been assigned a color.

The Message type is displayed on the *Filter Setup* dialog box in the selected color.



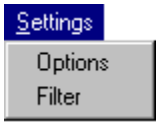
Changing the Overflow File Defaults

Changing the Overflow file defaults consists of accessing the *Options* dialog box and entering a file name, a pipe name, the maximum lines displayed in the *Nortel Logger* window, and the maximum size of the overflow file. This dialog box also allows you to select to have the *Nortel Logger 32* window always on the top location on your desktop.

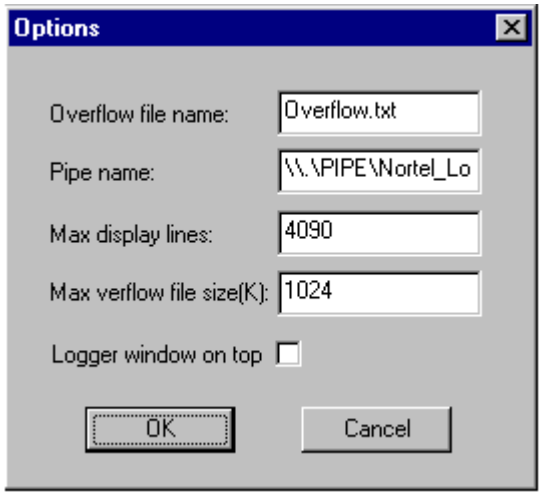
While the Nortel Logger is logging messages, it writes to the overflow file when the number of lines in the *Nortel Logger 32* window reaches the given limit. The *Nortel Logger* 32 window is cleared when the content of the Nortel Logger 32 window reaches the maximum lines set on this dialog box.

To Change the Overflow File Defaults:

1. From the *Nortel Logger 32* window, click on **Settings** to display the **Settings** menu options.



2. Click on the **Options** option.
   The *Options* dialog box is displayed.



3. Accept the defaults provided.
   Or
   Enter the desired information. Remember that if you change the pipe string name, you must set a corresponding name for the named pipe on the TAPI server's side manually.
4. Click on the **OK** button to save the changes and close the *Options* dialog box.

Using the Nortel Logger Troubleshooting Tool

The Nortel Logger Troubleshooting tool allows you to perform the following tasks:

- Save the troubleshooting information to an RTF or TEXT file.
- Append the information to an Overflow file.
- Clear the Overflow file.
- Print the troubleshooting information.
- Open a new information display window.
- Search for a particular string in the Logger display window and replace it.

Saving the Troubleshooting Information

To Save the Information in the Nortel Logger Display Window:

1. Click on the **Save** button  located on the Toolbar.
   Or

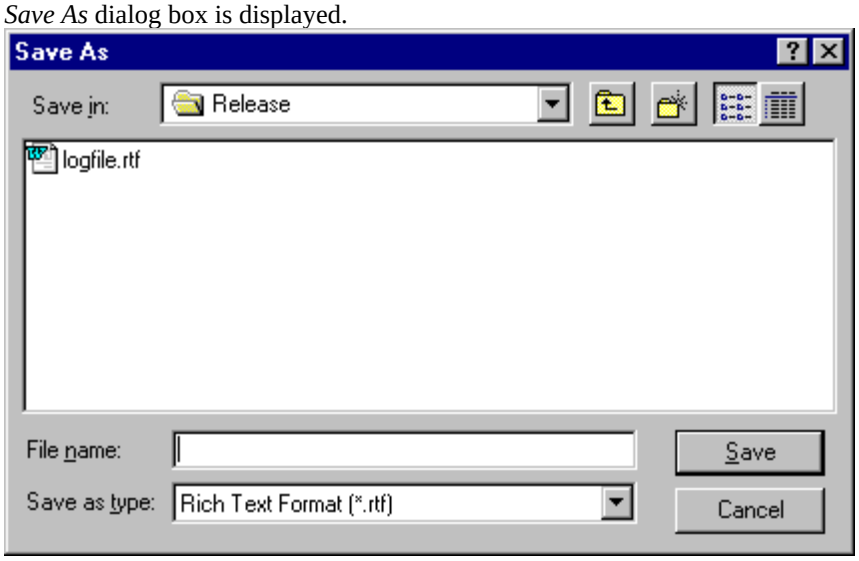
Click on **File** located on the Menu bar to display the **File** menu options.

Select the **Save** or **Save as** option.

The message information is saved to the currently opened file. If the content is from a new file or if you selected the **Save as** option, you are prompted for a file name. There are two file formats used by the Nortel Logger: RTF and TEXT. If the given file name has an extension as "rtf", the file will be saved as rich text edit format file. Otherwise the file will be saved as a plain text file.

Note: Both **Save** and **Save As** commands only save the current content in the *Nortel Logger 32* window.

The *Save As* dialog box is displayed.



2. Enter the file name and select the file type.
3. Click on the **Save** button to close the *Save As* dialog box.

Appending the Information to the Overflow File

Appending the current content of the *Nortel Logger 32* window to the Overflow file saves the message information in the Overflow file and clears the Nortel Logger display window.

To Append the Information to the Overflow File:

1. Click on **File** located on the Menu bar to display the **File** menu options.

2. Select the **Append to overflow** option.
   The message information is saved in the Overflow file and the Nortel Logger display window is cleared.

Clearing the Overflow File

You may be asked to clear the Overflow file before a troubleshooting session to ensure the information messages are current.

To Clear the Overflow File:

1. Click on **File** located on the Menu bar to display the **File** menu options.

2. Select the **Clear overflow file** option.
   The Overflow file is cleared of all previous information.

Printing the Troubleshooting Information

The **Print** option allows you to print the current content of the Nortel Logger window.

To Print the Information in the Nortel Logger Display Window:

Click on the **Print** button  located on the Toolbar.
Or
Click on **File** located on the Menu bar to display the **File** menu options.

a. Select the **Print** option.
The *Print* dialog box is displayed.

b. Click on the **OK** button to accept the default settings.
Or
Make changes as necessary and click on the **OK** button.

The current content of the *Nortel Logger 32* window is printed.

Opening a New Information Display Window

Opening a new Nortel Logger display window closes the current display window. You are prompted to save the current display window information before opening a new display window, if the current window is not empty. Opening a new display window clears the current display window.

To Open a New Information Display Window:

1. Click on the **New** button  located on the Toolbar.
Or

Click on **File** located on the Menu bar to display the **File** menu options.

Select the **New** option.

2. If the current display window is not empty, save the current content, if desired.

The window is cleared and a new display window is opened.

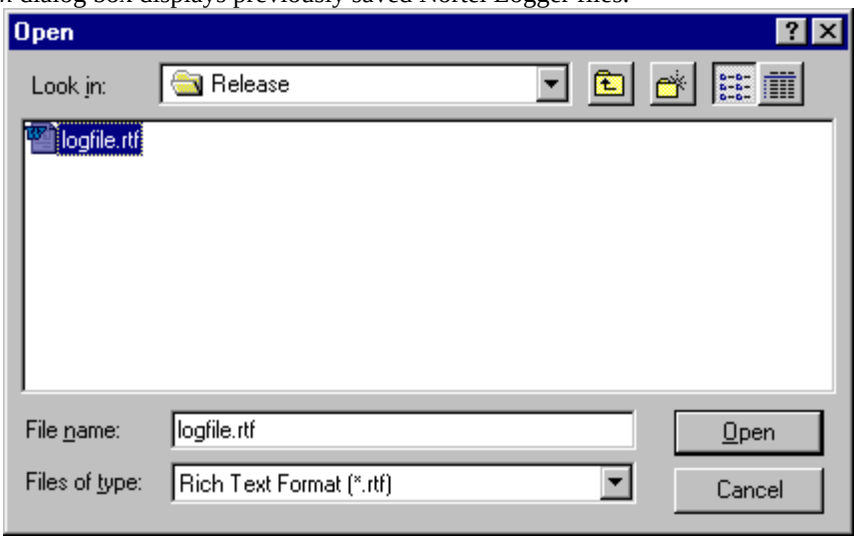
Opening an Existing Troubleshooting File

To Open an Existing Troubleshooting File:

1. Click on the **Open** button  located on the Toolbar.
   Or
   Click on **File** located on the Menu bar to display the **File** menu options.

   Select the **Open** option.

The *Open* dialog box displays previously saved Nortel Logger files.



2. Click on the file you wish to open to highlight it.
3. Click on the **Open** button.
   The *Open* dialog box is closed and the selected file is displayed on the *Nortel Logger 32* window.

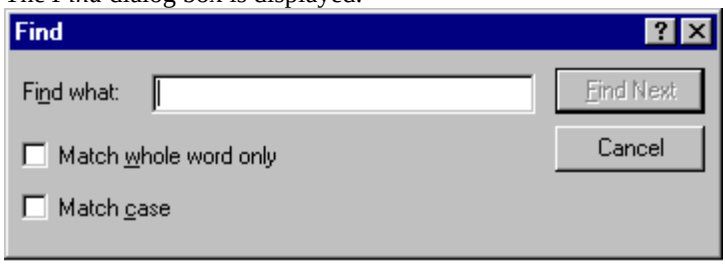
Searching for a Particular String in the Logger Display Window

The Nortel Logger provides a search function to assist you in searching for a particular message string. The **Replace** option allows you to replace a found message string with a user-determined string.

To Search for a Particular String in the Logger Display Window:

1. Click on **Edit** located on the Menu bar to display the **Edit** menu options.

2. Select the **Find** option.
   The *Find* dialog box is displayed.

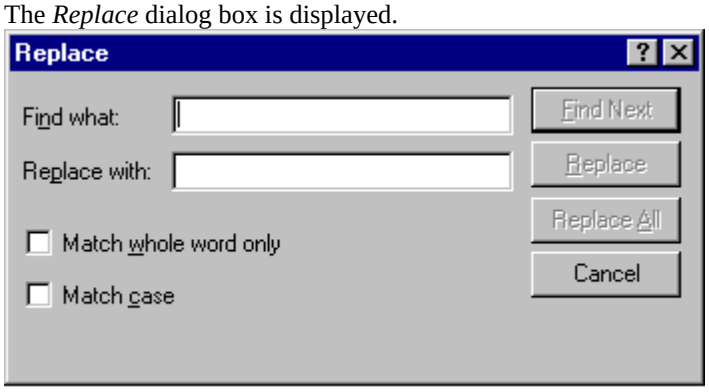


3. Type the String search criteria in the *Find what* field.
4. If desired, select to Match whole word only and/or Match case by clicking in the check box.
5. Click on the **Find Next** button.
   The results of the search are highlighted on the Nortel Logger display window.
6. Repeat step 5 to search for addition matches.
7. When finished searching, click on the **Cancel** button to close the *Find* dialog box and cancel the search.

To Search for a Particular String and Replace it:

1. Click on **Edit** located on the Menu bar to display the **Edit** menu options.

2. Select the **Replace** option.
   The *Replace* dialog box is displayed.



3. Type the String search criteria in the *Find what* field.
4. Type the String you wish to replace the search criteria with in the *Replace with* field.
5. If desired, select to Match whole word only and/or Match case by clicking in the check box.
6. Click on the **Find Next** button to start the search.
   The results of the search are highlighted on the Nortel Logger display window.
7. Click on the **Replace** or **Replace All** button to replace the found string with the user-determined string.
8. Repeat step 6 and 7 to search for addition matches and replace them.
9. When finished searching and replacing, click on the **Cancel** button to close the *Replace* dialog box and cancel the search.

Exiting the Nortel Logger Troubleshooting Tool

To Exit the Nortel Logger:

1. Click on **File** located on the Menu bar to display the **File** menu options.

2. Select the **Exit** option. The *Nortel Logger 32* window closes.

Nortel's TAPI Compatibility

The following figure shows TAPI Compatibility

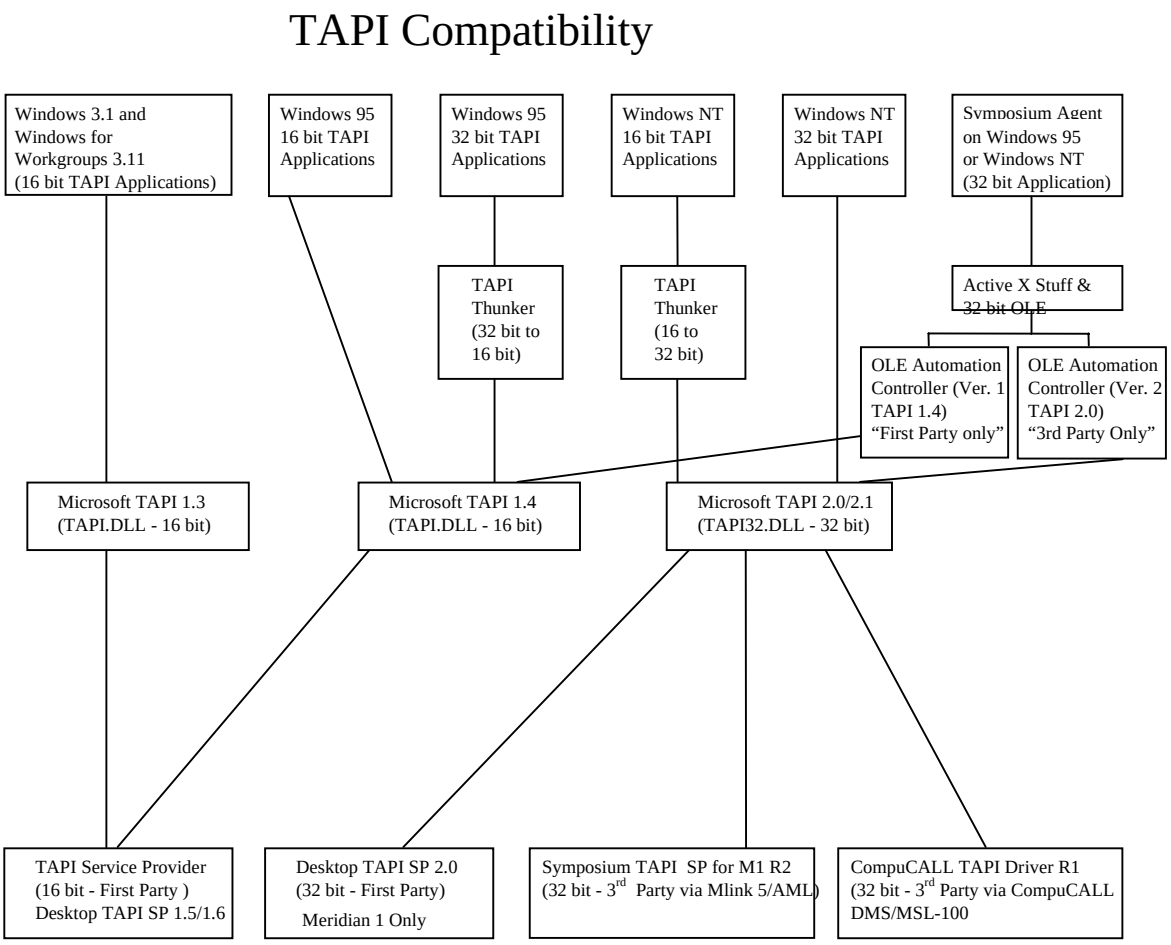


Figure 7 TAPI Compatibility

Desktop TAPI SP for MCA Application Error Recovery

The following error messages could occur when you start your TAPI SP for MCA applications.

- The TAPI Line Initialize Call failed.
  Error Code = 80000048
- Failed to get device capabilities.
- Line cannot be initialized.

If you get an ‘Initialization error, refer to the “Line Initialization Error” section.

If you receive any of the above messages, try the following error recovery procedures.

- Make sure your phone is working and is not deactivated.
- Be sure the light is on and flashing on the MCA.
- Check the interface device connections to the PC.
- Verify that you have selected the correct interface device, COMM ports, Switch type, and telephone type and that the keys were assigned properly during TAPI SP Setup (see Chapter 3).
- Restart Windows and try again.
- Uninstall and then re-install the TAPI SP for MCA 2.0 software.

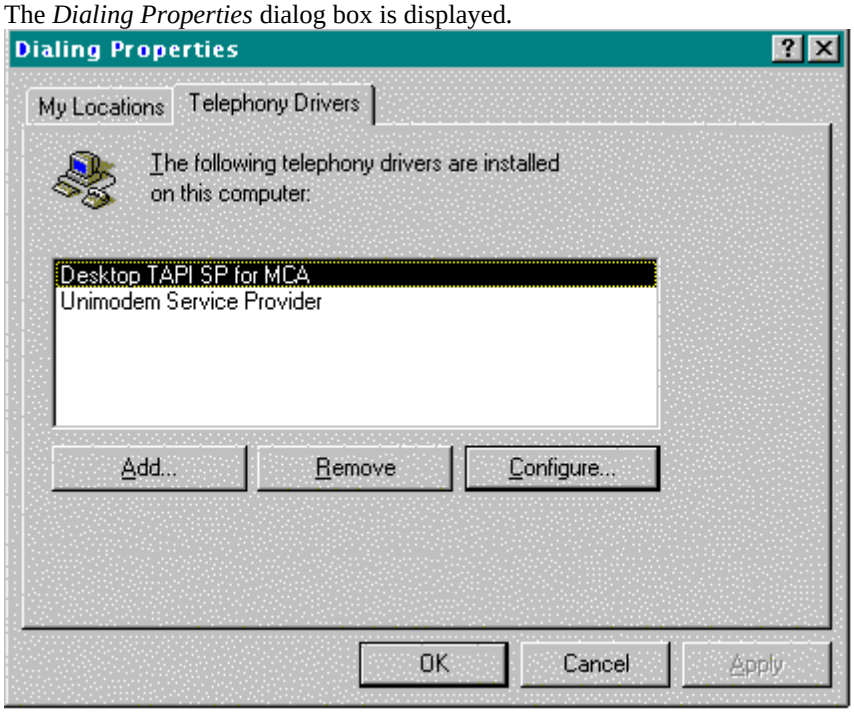
Problems

Desktop TAPI SP for MCA Fails

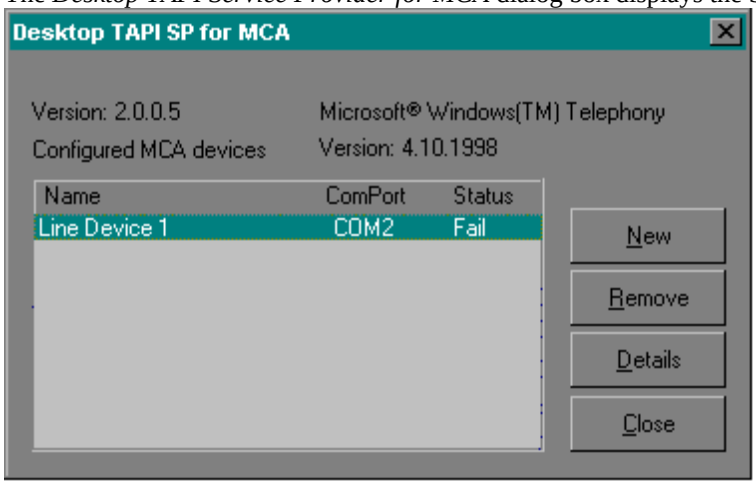
If TAPI SP for MCA shows a status of “Fail” after restarting TAPI, reboot your system before proceeding. If TAPI SP for MCA still fails, you may not have the COMM port connected, configured, or selected correctly or the MCA device may not be working.

To Troubleshoot the TAPI SP for MCA:

1. Access the Control Panel and double click on the **Telephony** icon to reinitialize the driver. The *Dialing Properties* dialog box is displayed.



2. Select the **Desktop TAPI SP for MCA** (if not highlighted**)** and click on the **Configure** button**.** The *Desktop TAPI Service Provider for MCA* dialog box displays the Status of the MCA.



3. If the status is "Fail," click on the **Details** button to display the Diagnostics information.

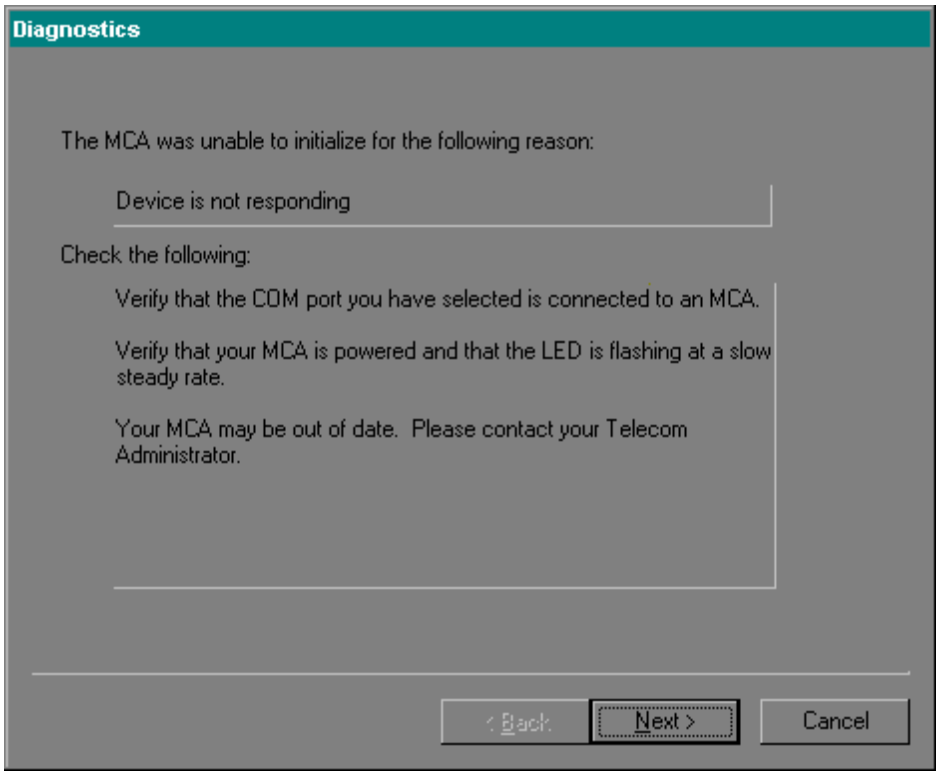
Information is provided on the following scenarios:

- MCA not Connected or MCA not Working
- COMM Port is Incorrect
- Configured COMM Port is Used by Another Device

Note: The information that is displayed in the *Diagnostics* dialog box depends upon your situation. The following screens shown are for demonstration purposes only. The information on your screen may vary.

MCA not Connected or MCA not Working:

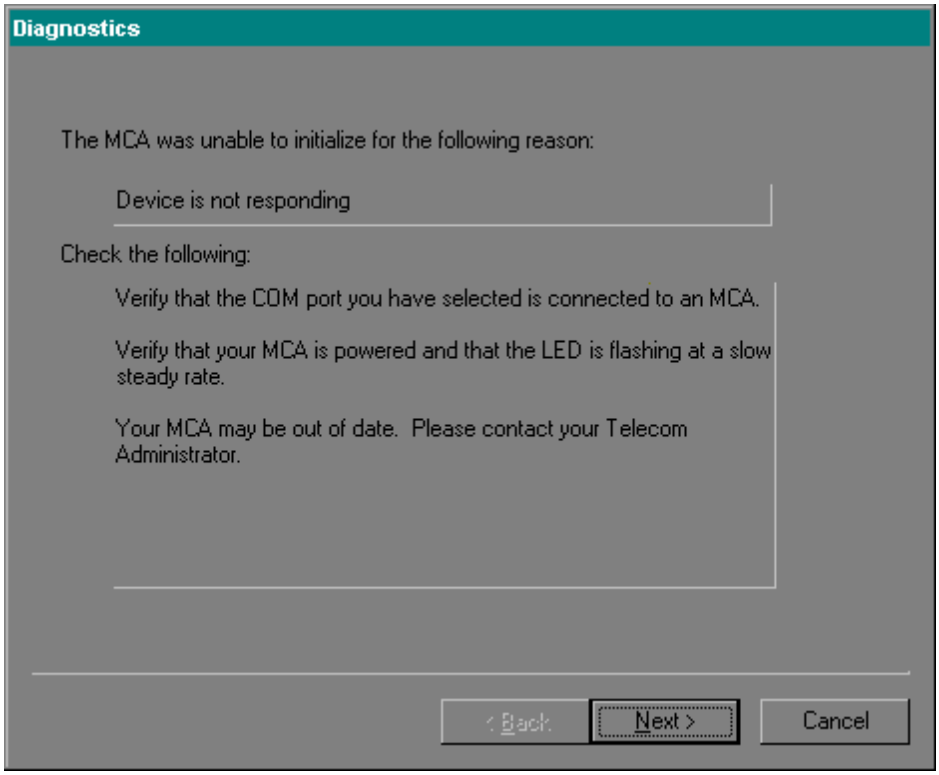
The following information is displayed when the MCA is not connected or when the MCA is not working:



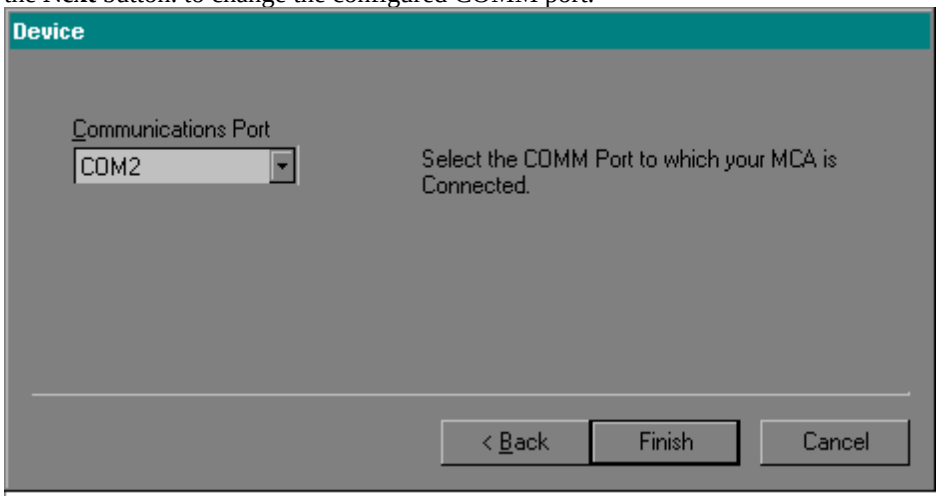
Follow the instructions on the screen. Restart TAPI and check the status on the *Desktop TAPI Service Provider for MCA* dialog box.

COMM Port is Incorrect:

The following information is displayed when the COMM port is incorrect:



After you have checked the correct COMM port and that the MCA is connected and powered, click on the **Next** button. to change the configured COMM port.



Click on the down arrow to display the list of COMM ports and select the correct one.

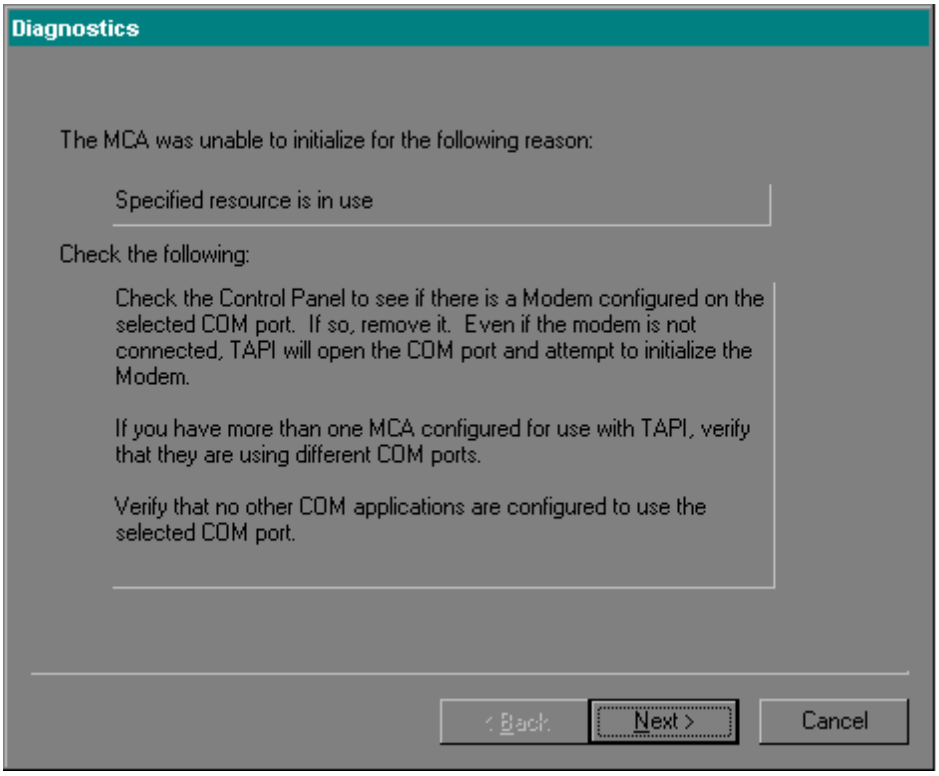
Click on the **Finish** button. The following information is displayed.

Click on the **OK** button to acknowledge the information.

Restart TAPI and check the status on the *Desktop TAPI Service Provider for MCA* dialog box.

Configured COMM Port is Used by Another Device:

The following information is displayed when the Configured COMM port is used by another device:



Follow the instructions on the screen. Restart TAPI and check the status on the *Desktop TAPI Service Provider for MCA* dialog box.

TAPI Fails to Initialize

Problem:

After installing the TAPI SP for MCA and TAPI fails to initialize, the Microsoft TAPI system files may be missing or may not be the latest version. If this is the case, they need to be installed and the TAPI Service Provider must be installed into TAPI. However, this process can vary greatly from one Windows version to another.

First and foremost, be sure to do version checking when installing all files.

Second, use a setup application rather than relying on an .INF file to install Microsoft TAPI. While the ATSP sample uses an .INF file to install, there are several major problems with using an .INF file:

- TAPI needs to already be installed.
- You can not do operating system version checking if you use an .INF file.
- You can not do file version checking with an .INF file.
- Bugs that will not be fixed in Windows NT 4.0 prevent an .INF file installation.

Third, once all the Microsoft TAPI files are installed, the TAPI SP for MCA must now be installed into TAPI. Refer to the "Installing the TAPI SP for MCA Software" section for information on installing the TAPI SP for MCA.

Unable to Initialize TAPI Service Provider when using Call Manager

When starting the Call Manager application, you receive the following error message:

Unable to initialize TAPI Service Provider

The Call Manager automatically tries to initialize the TAPI Service Provider on startup. However, Call Manager provides the capability to deselect this option for using connectivity other than the TAPI Service Provider. Ensure the option to initialize TAPI is selected.

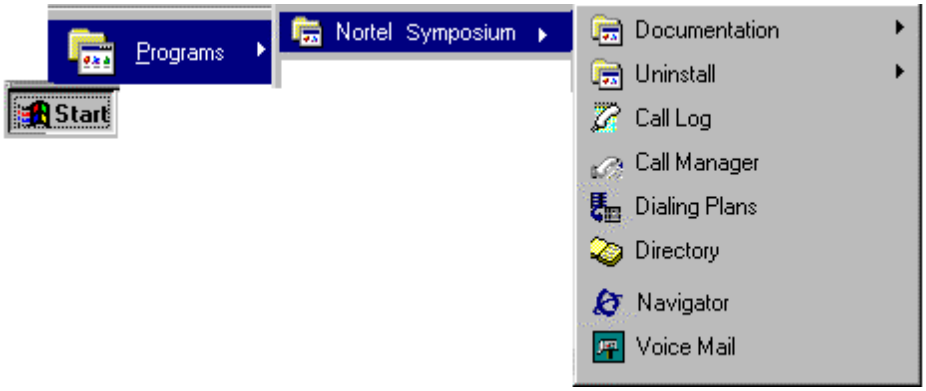
To Check the Initialize TAPI default:

1. **Access the Call Manager main window.**

   a. Click on the **Start** button 

located in the lower left corner of the desktop. The **Start** menu displays the Windows options.

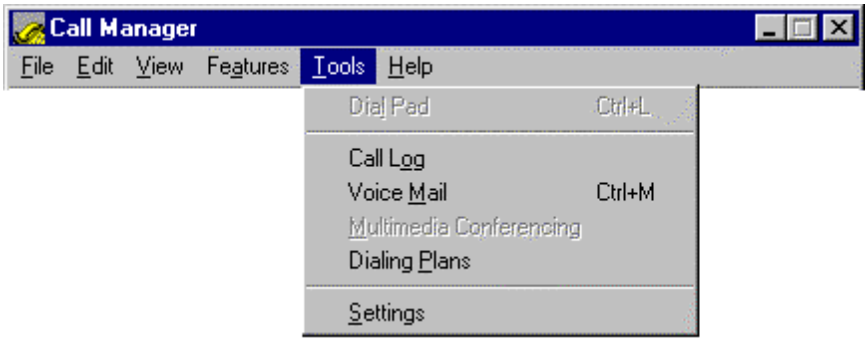
   b. Select **Programs/Nortel Symposium.**



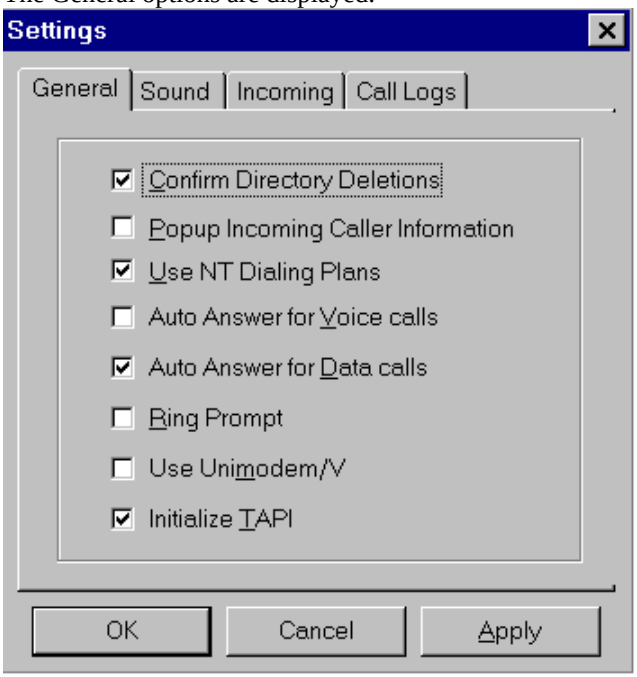
c. Select Call Manager.
The *Call Manager* main window opens.

2. Access the *Settings* dialog box.

a. Click on the **Setting** button  located on the Toolbar.
Or
Click on **Tools**, located on the Menu bar of the *Call Manager* window.
The **Tools** menu is displayed.



b. Click on **Settings**.
The *Settings* dialog box is displayed. Click on the **General** tab to display the General preferences, if not already displayed.
The General options are displayed.



3. If not selected, click in the Initialize TAPI check box to select it. A check mark means the option is selected.

Files Necessary for Windows 95

One complication for Windows 95 is the TELEPHON.CPL file. This file is installed to the system directory by default along with all the rest of the Windows 95 TAPI files. However, because this file is not needed by most people using Windows 95, it is installed in the system directory as TELEPHON.CP$ to reduce control panel clutter. First look in the system directory for TELEPHON.CPL; if that is not found, locate TELEPHON.CP$ (also looking in the system directory), and rename it to TELEPHON.CPL.

Line Initialization Error

Problem:

If running a TAPI Application causes a "Line Initialization error" or the functions of the TAPI Application do not seem to be working, re-check your interface device cable connections and the TAPI Service Provider configuration. However, you may also need to remove other TAPI Service Providers as indicated in the workaround below.

Workaround:

Remove all other Telephony Drivers, for example, TAPI Service Providers. Double-click on the Control Panel's Telephony icon, click on the unwanted Driver, and click on the **Remove** button. Restart Windows.

The Installed Drivers list must include the Nortel TAPI SP entry only.

Operation Failed Error

Problem:

Receiving an OPERATION_FAILED error indicates an attempt to perform a function that the switch does not allow. For example, the switch does not complete a conference while one party is ringing. It is up to the application how handle this. The TAPI returns the result code as OPERATION_FAILED if the function AddToConference is called before the pending conference is answered.

Workaround:

In the example, make sure the call is answered and then add to the conference. Generally, try the function again.

Problems with MCA Connectivity

Problem:

If you have problems with the MCA connectivity device, the following Logger file contains information when the MCA cable is not plugged in or when the MCA power supply is not plugged in or has gone bad:

```
1 : vaccmain : 149:Diagnostic DLL' Loaded Tick: 109895
1 : vacclin2 : 1628:TSPI_lineNegotiateTSPIVersion : Tick 109909
1 : vacclin2 : 1647:OK : Tick 109911
1 : vaccprov : 656:TSPI_providerEnumDevices : Tick 109913
1 : vaccprov : 660:OK : Tick 109914
2 : vaccprov : 738:InitTimeoutSeconds is 60000 ms
1 : vaccprov : 747:TSPI_providerInit : Tick 109938
1 : vaccprov : 749:InitTimeOut: 60000
1 : vaccprov : 750:Free space 0x1bc9000
0 : vaccwin : 350:7334
1 : vaccprov : 835:Applet window handle 0x1cc
1 : vaccprov : 838:Applet task handle 0x258e
2 : vaccwin : 254:WM_VACC_START Tick 109995
2 : drvstart : 133:Inspect timer ticks: 5 0x5
0 : accutils : 566:MCA not connected or powered
2 : accints : 1355:Bad status from OpenCommPort 64
0 : accmain : 256:InitDriver failed
0 : accmain : 340:AccInstall failed
0 : ntapi  : 104:InitialiseDriver failed
1 : vaccwin : 103:mWinRegister: 9
0 : vaccprov : 224:WM_VACC_START result: 0x3e6 Aborting Provider initialization
1 : vaccprov : 869:OPERATIONFAILED : Tick 110775
0 : vaccmain : 558:At the very end of the wep for vaccess Tick: 110778
```

Workaround:

Check that the MCA cable is plugged in and the power supply is turned on and connected to the MCA.

TAPI Applications Do Not Display Correct Information

Problem:

Symposium TAPI MCA 2.0 interprets only information presented to the bottom line of the phone set's display. DNIS, which appears on the top line, is not captured or interpreted. Calling ID and Called ID information delivered to the TAPI application follows these supported formats. Refer to the "Supported Display Formats" section located in Appendix C for the supported formats.

Problem:

If your TAPI Application does not display the correct calling number or calling party's name, the name assigned to the line in the switch may need to be changed. The TAPI Service Provider may not deliver the correct Calling number or name to the TAPI Application if the name is configured as indicated below or the first letters in the name conflict with the Reason Codes defined under PBX/Switch Parameters:
Name Format: Name + a space + a number
Example: John Smith 2

Workaround:

From a M1 PBX Administration Terminal use LD 95 to change the name so that a space and number do not follow the name.

Also, verify that the Reason Codes defined under PBX/Switch Parameters match the parameters defined in LD 95 on the Meridian 1 PBX and do not conflict with the Name displayed for the calling party.

Problem:

In high traffic environments, when multiple calls are arriving at the same set at the same time you are trying to dial out, some digits of the dial out string get lost. For example, if you are dialing 932-1450, your set may display 21450.

Workaround:

Add the following variables to the nttapisp.ini file under [Telephone]:

MaxCalls= defaults to 10, must be between 8 and 64
TxQueueSize= defaults to 100, raising may eliminate signals being dropped
RxQueueSize= defaults to 500, raising may eliminate signals being dropped
MaxEvents= defaults to 80, must be between 64 and 128

Problem:

In high traffic environments, when more calls are coming in faster than the system can handle, such as when calls are coming in faster than one call every two seconds, the driver may report incorrect name and number information to the TAPI application.

Workaround:

This is a limitation of the TAPI SP for MCA.

Problem:

Parked calls that return to the phone set may report incorrect calling name and number. This occurs when the calls are parked on a switch other than the switch where the call originates.

Workaround:

After unparking the call, hold and unhold the call and the display reports the correct information.

Desktop TAPI SP for MCA Files

After completing the installation of the TAPI SP for MCA software, files are copied to the directories listed in the following table:

Table 8 TAPI MCA 2.0 files

Filename	Install Type	Destination	Comments
License.txt	N/A	N/A	This file is not copied
Readme.txt	N/A	N/A	This file is not copies
Logdll.dll	Typical	System directory	See ****Note*** below
NortelLogger.exe	Typical	c:\Program files\Nortel Networks\Desktop TAPI SP for MCA	Installation directory chosen by user
Phone.exe	Typical	c:\Program files\Nortel Networks\Desktop TAPI SP for MCA	
Usrguide.pdf	Typical	c:\Program files\Nortel Networks\Desktop TAPI SP for MCA	
MCATSP.tsp	Typical/Compact	System directory	See ****Note*** below
Uninstall.isu	Typical/Compact	c:\Program files\Nortel Networks\Desktop TAPI SP for MCA	This is created during the installation process to allow an uninstallion from the Add/Remove Programs applet in the Control Panel

* ***Note***
On Windows 95/98 systems, the System directory is usually c:\Windows\System
On Windows NT systems, the System directory is usually c:\Winnt\system 32

Removing Microsoft TAPI 2.1 Software

If you are using Windows 95 or Windows NT with Microsoft TAPI 2.1 and want to install and use the TAPI SP for MCA, you must uninstall the TAPI 2.1 software and reinstall your system's original TAPI system files. This will install Microsoft TAPI 1.4.

To Uninstall TAPI 2.1 Software on Windows 95 system:

1. Locate the file REMTAPI.INF for Windows 95, or REMTAPIN.INF for Windows NT.
2. Right-click on the file, then click on "Install."
   This will reinstall your original TAPI system files.
3. Place the TAPI.dll for Microsoft TAPI 1.4 in your Windows\System directory.

Note: When you take Microsoft TAPI from 2.1 to 1.4, you must have a copy of the TAPI.dll for the 2.1 version. This DLL can be obtained from a Windows 95 CD or from a machine that is already using the TAPI SP for MCA.

To Uninstall TAPI 2.1 Software on Windows NT system:

If you wish to uninstall TAPI 2.1 and return to Microsoft's TAPI 2.0 on ***Window NT*** only, follow the following steps:

1. Locate the remtapin.inf file.
2. Right click on the correct file and select the **Install** option.

Note: If you use the remtapi files, you may have to copy the Telephony.cpl file back into the Windows\system directory.

Removing the TAPI SP for MCA Software

If it becomes necessary to remove TAPI SP for MCA software, remove it from the Telephony Drivers and then use the Windows Add/Remove feature located on the Control Panel to remove the files.

To Remove the TAPI SP for MCA Software:

1. Select **Start/Settings/Control Panel**.
   The *Control Panel* window is opened.
2. Double-click on the **Telephony** icon.
   The *Dialing Properties* dialog box is displayed.
3. Click on **Desktop TAPI SP for MCA** to highlight it.
4. Click on the **Remove** button.
   You are asked to verify the remove command.
5. Click on the **Yes** button.
   The **Desktop TAPI SP for MCA** is removed and the *Dialing Properties* dialog box is displayed.
6. Click on the **OK** button to close the *Dialing Properties* dialog box.
   The *Control Panel* window is opened.
7. Double-click on **Add/Remove Programs**.
   The *Add/Remove Programs* dialog box is displayed.
8. Select the **Desktop TAPI SP for MCA** option from the list and click on the **Remove** button.
   The TAPI SP for MCA files are removed.

Appendix A Additional User Information

Appendix A provides additional user information. This information includes how to receive technical support, a summary of the online documents, and information on using the Adobe Acrobat Reader to view the online documentation.

Technical Support for the MCA TAPI Product

If you have difficulty when using the MCA TAPI product, help is available in different formats. This document provides troubleshooting tips in Chapter 6. For telephone support in the United States and Canada, contact your Nortel support personnel.

Technical Assistance (800) 527-0797
Product Information (800) 4-Nortel
Developer Support (800) NT4CTI0

Outside the United States and Canada, contact your Nortel Support or Sales representative.

To resolve a TAPI SP for MCA problem properly, Nortel field support personnel may require the following information:

1. A description of the problem, sufficiently detailed to help Nortel reproduce the problem. For example, if the problem involves screen pops, the description should include not only what appears on the PC monitor (TAPI application), but also what appears on the phone's display, with as much accuracy as possible—including numbers, dashes, and names that appear on the top and bottom lines of the display.
2. A printout of the nttapisp.ini file, VISIT.ini, telephon.ini, and the autoexec.bat.
3. Printouts of certain switch datafill. On Meridian 1, use LD 20 to print the TNB of the set. Ask your switch administrator for these.
4. The switch software release number. For the Meridian 1, indicate the X11 Rel. 19, 20, and so forth.
5. A log file of the problem (by running the Logger troubleshooting tool to create and save a log file).

Overview of the Online Documentation

The User documents for the TAPI SP for MCA are provided electronically as online documents. However, your version of the TAPI SP for MCA may or may not contain all of the available documents. The following chart provides the name of the document, the file name and a description:

Document Name	File Name	Description
Nortel Symposium TAPI MCA Reference Guide	Usrguide.pdf	This reference guide provides information on installing, configuring, and using the MCA and the Desktop TAPI SP for MCA.
Nortel Symposium Desktop TAPI Service Provider Programmer's Guide	Progvol1.pdf	This document contains information that is helpful to developers who are writing applications that may use the Desktop TAPI SP for MCA.

The Adobe Acrobat Reader must be installed to access the online documentation. After installing the Adobe Acrobat Reader, double-clicking on the .PDF file opens the online document in the *Acrobat Reader* window.

Overview of the Adobe Acrobat Reader

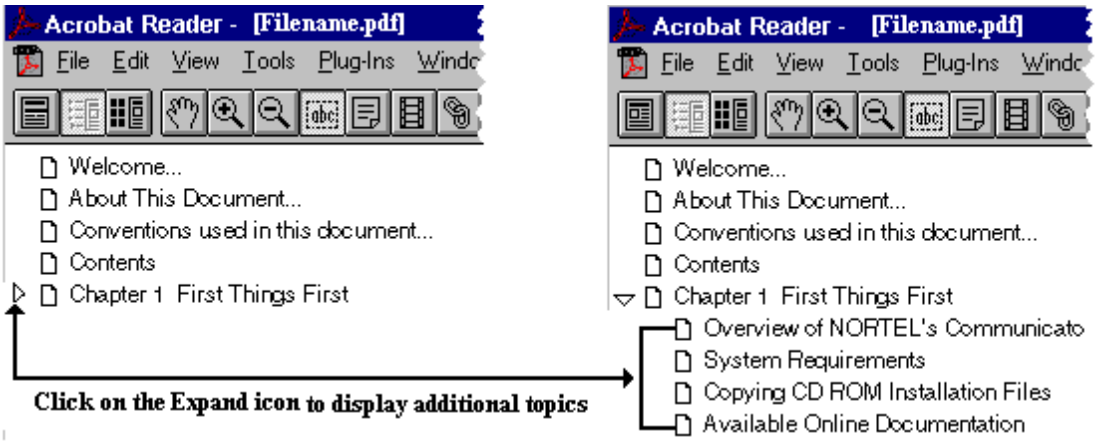
The Acrobat Reader Window

The *Acrobat Reader* window contains menus, tools, and buttons. The Menu bar of the *Acrobat Reader* window displays the **Help** menu. The **Help** menu contains important information on how to view and print the document. The Toolbar on the *Acrobat Reader* window provides tools for working with the documents. Select a tool by clicking the icon.

The online documents contain bookmarks to assist you in finding information. Selecting the **Bookmark** button  provides an automated table of contents.

The Bookmarks are displayed on the left of the window.

Clicking on the **Expand** icon ▷ located to the left of the bookmark displays additional topics in a tree-view.



Clicking on the **Collapse** icon ▽ removes the additional topics.
Clicking on a Bookmark takes you directly to the page containing the information.

Using Links on the Adobe Acrobat Window

The Table of Contents, Index, and certain words or phrases provide direct links to the page associated with the entries. Links are **red** boxes that enclose a page number or word. Clicking on the red box displays the page that contains the information.

In addition, certain pages reference additional information. When these references are enclosed in a **red** box, clicking in the box displays the referenced page or document.

Clicking on the **Back** button  displays the previous page.

Appendix B Additional MCA Information

Appendix B provides additional MCA Information that may be helpful when installing and using the MCA.

Telephones without MCA Compatible Foot stands

Meridian Digital Telephones manufactured before February 6, 1998 must have the foot stand replaced with an MCA compatible foot stand. See the label in Figure 8 for easy identification. These sets also required the installation of a jumper inside the telephone.

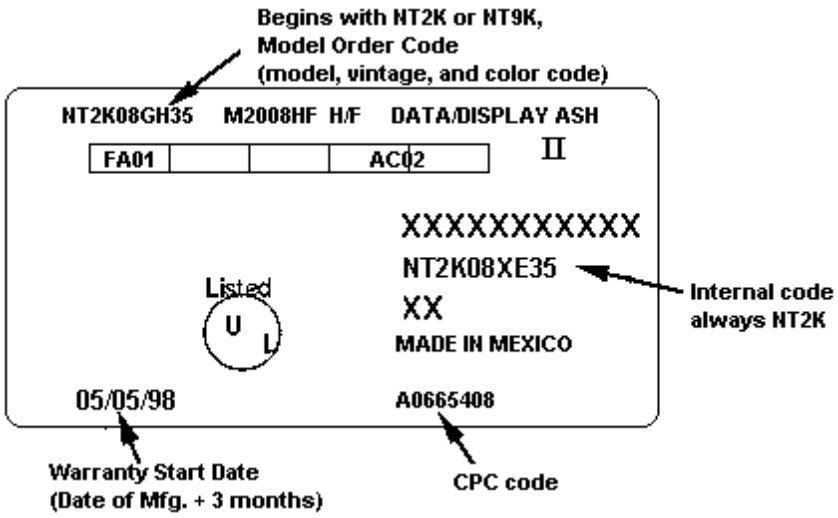


Figure 8 Telephone set label with invalid Warranty Start Date

This figure shows the Warranty Start Date before the 05/06/98 date, which requires the MCA compatible footstand and internal jumper.

Internal Jumper Requirements

The internal jumper is installed on Meridian Digital Telephones manufactured after February 6, 1998, and identified with a Warranty Start Date code of 05/06/98 or later. Telephones with a Warranty Start Date code 05/05/98 or earlier require an ATA/MCA Jumper Kit (NT2K71AA, orderable as merchandise. Two jumpers are included in the ATA/MCA Jumper Kit. The Jumper with the Black connector referenced below is designed for use with NT2Kxxxx or NT9Kxxxx telephone vintages. The Jumper with Brown connector is designed for use with NTZKxxxx vintage telephones.

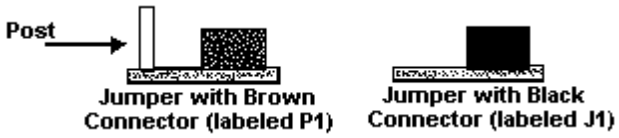


Figure 9 ATA/MCA Jumper Kit

The following diagrams highlight the placement of the Jumper when used on NT2K / NT9K vintage telephones as opposed to the earlier model NTZK telephones.

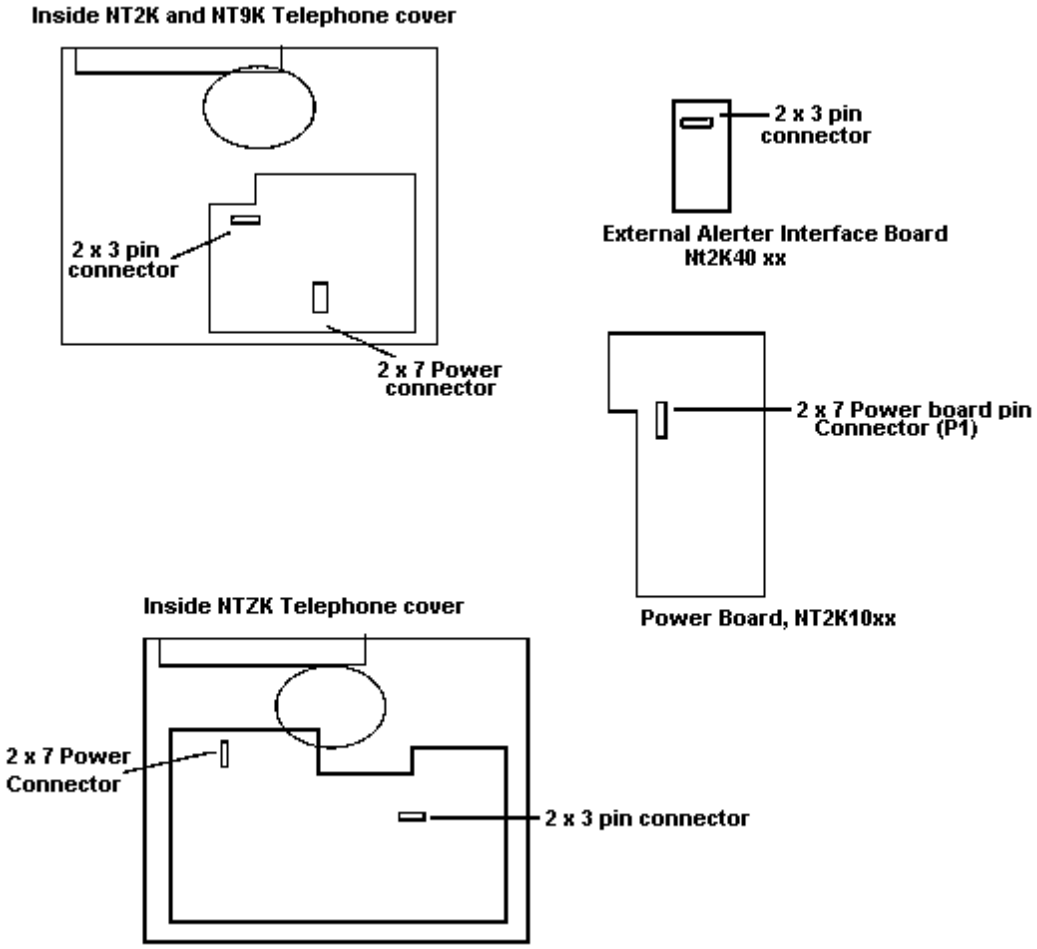


Figure 10 Jumper Placement

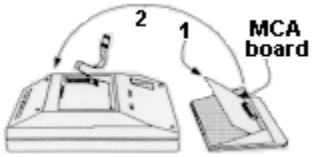
Preparing the Telephones without MCA Compatible Foot stands

To Prepare the Telephone without the MCA Compatible Foot stand:

1. If you have the NTZK or NT2K telephone (date code prior to April 1998),remove and discard the foot stand.

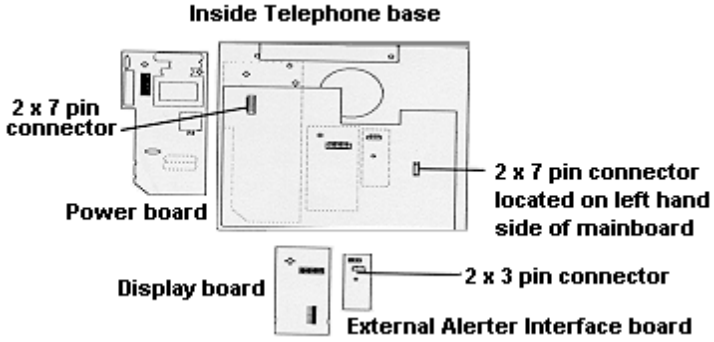
   Note: To remove the foot stand from the telephone base, press in the back edge of the foot stand as you lift it from the telephone base.

2. If you have an MPDA installed, unplug it from the data line jack in the telephone base.
3. Remove the foot stand and then remove the back covering of the telephone base (four screws).

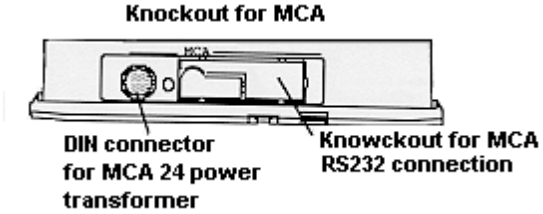


4. If the telephone is equipped with a Power Supply board and/or cable, (refer to illustration below) you must remove them before installing the MCA.
   a. Remove the two screws from the Power Supply board and set them aside.
   b To remove the Power Supply board from the NTZK telephone, grasp the board on each side and rock it while applying upward pressure, until it is released.
   c To disconnect the Power Supply board from the NT2K telephone, lift the board out of the set and disconnect the ribbon cable from the 2X7 pin connector.
5. If the telephone is equipped with the External Alerter board, you must remove it before installing the MCA. The External Alerter board is located inside the telephone base right of center. Refer to illustration below.

   · Remove the screws from the Extemal Alerter Interface board.
   · Grasp the board firmly on each end and pull upward to remove it from the 2X3 pin connector.



6. Remove the knockout sections in the rear wall of the foot stand for the MCA DB-25 connector and the Power Transformer DIN connector. To remove the knockout sections, use a flat tip screwdriver to push out the plastic pins holding the knockout in place.



Refer to the “Installing the MCA” section located in Chapter 2 for information on installing the MCA once the telephone is prepared.

Additional MCA Configuration and User Information

Default MCA Configuration

The MCA is configured in asynchronous mode when it is shipped from the factory.

These parameters can be changed using keypad dialing commands, *or in LD 11 with Xll release 18 and later.* To change a parameter listed here, refer to the keypad dialing section of this guide.

MCA defaults to synchronous or asynchronous mode from the telephone. Listed here are the default parameters. The mode is determined prior to resetting the parameters. Refer to the Reset data parameters section in this guide for more information.

Asynchronous	***Synchronous***
Keyboard dialing	*Hot Line Off*
Autoanswer	*Autoanser*
DTR OFF	*DTR OFF*
DCD ON	*DCD ON*
Baud rate 9600	*Baud rate 56000*
Hot Line OFF	*Virtual Leased Line OFF*
Remote Loopback OFF	*Remote Loopback Off*
Full duplex	*Full duplex*
Assert RTS ON	*PSDS OFF*
Space parity	*Internal clock*
Terminal mode	*Modem Mode*
	SL-1 Mode
	V.25 bis OFF

Additional Asynchronous Features

Autobaud

Autobaud is enabled each time you release a data call.

Each time you enter <CR> to activate keyboard dialing or the letters "AT" to activate AT dialing, the MCA times the length of bits received and sets the baud rate accordingly.

Autoparity

The MCA automatically sets the parity each time the letters *"AT"* are entered for AT dialing.

In Keyboard dialing you must enter a period (.) and <CR>. This is normally the first step to take when your terminal displays a garbled prompt.

Modem Pooling

When you dial a modem pool, the MCA prompts:

ENTER REMOTE NUMBER

Enter number of external modem to access and <CR>.

CALL CONNECTED.SESSION STARTS

Making a Data Call

Before using the MCA to make data calls:

Make sure your MCA is present within your Meridian Modular Telephone. In the back of the telephone, a red LED will be blinking at the constant rate to indicate the MCA is powered up and ready to go.

Attach your terminal or PC serial port to the MCA 25 pin D connector via an RS-232 *or V.35 cable.*

Make sure that your terminal or PC is powered up and ready to send data.

If you are using a PC, your communication software (to make your PC emulate a terminal) should be running.

The procedures in this section are all you need to make basic data calls. To find out more about the MCA's features and capabilities, see the following sections, which describe the three dialing methods in more detail.

The three methods are provided for your convenience. Use the dialing method you find most comfortable, or which performs the functions you desire to use.

Note: Throughout this guide, <CR> refers to a carriage return.

Keyboard dialing

1. <CR>.

   ENTER **NUMBER OR H (FOR HELP):**

22 Enter number of far end data device and <CR>.

   CALL C0NNECTED.SESS10N STARTS 3 <CR>.

Follow normal procedures for logging on and using the data service.

AT dialing

1. AT <CR>.

   OK

2. ATDxxxx (where xxxx is the number of the far end data device).

CONNECT

3. <CR>.

Follow the normal procedures for logging on and using the data service.

Keypad dialing

1. Press PROGRAM and dial # on phone's keypad. If your phone has a display it will show:

   MDIAL

   ENTER DIGITS. P TO EXIT

2. Dial number of the far end data device. Display will prompt (if call is successful):

   DATA CALL CONNECTED Terminal will prompt:

   CALL CONNECTED.SESSION STARTS 3 <CR>.

Follow normal procedures for logging on and using the data service.

Releasing a data call

To release a call while in asynchronous mode, use any of the following methods:

-- Hold down break key(s) for 1.6 seconds or longer. Note that this method is not supported on terminals with non-overlapping timed break.

-- Press break key(s) three (3) times in quick succession. The break must be at least 1 O0 milliseconds and all 3 breaks must be within 1 second.

-- Press PROGRAM on phone and dial

-- Drop DTR.

`-If` the far end data device releases the call, the MCA automatically drops its end.

Release a synchronous call using one of these methods:

-- Drop DTR

-- Press PROGRAM on your telephone and dial [].

When a data call is disconnected, the terminal displays the following :

RELEASED
Or
NO CARRIER ***(in AT dialing mode)***

Dialing Methods

The MCA provides three methods for making data calls through Nortel Networks's PBX: keyboard dialing, AT dialing, and keypad dialing. Keyboard and AT dialing are done by entering commands at a terminal (or a PC running software to make it emulate a terminal), while Keypad Dialing is done via the telephone keypad.

Keyboard dialing is menu driven. Data calls are made by hitting <CR> to get a Main menu. By navigating through the menus, different features can be activated.

AT dialing is very similar to methods used to make modem calls with a Hayes Smartmodem*. The user enters a command starting with the letters "AT" followed by a few letters to distinguish the command, and a <CR>.

Keypad dialing uses the top right-hand function key on the telephone set, labeled PROGRAM (this key is also referred to as the P-key). All keypad dialing is done by first pressing PROGRAM followed by a two digit command to be executed. You must hit **Program** again to execute the command, and to relinquish the keypad for use by the telephone set or to enter additional commands.

*Smartmodem is a trademark of Hayes Microcomputer Products Inc.

Switching between keyboard and AT dialing

To switch between AT dialing and keyboard dialing, you must be in the idle state (not connected to a far end data device). That is, the most recent prompt must be either:

NO CARRIER
or
RELEASED

At this point you may type AT to get AT dialing or <CR> to activate keyboard dialing.

Keyboard Dialing

This section explains the keyboard dialing commands and how to use them. You can enhance your data call dialing by using features such as Speed Call and file scripting.

Keyboard dialing is menu-driven. Examples are on the previous page. Use them as a reference when following procedures.

Each procedure in this chapter assumes you are beginning at the initial prompt of:

ENTER NUMBER OR H (FOR HELP):

To get the initial prompt, hold down the break key(s) for at least 1.6 seconds and hit the carriage return (<CR>). This will release a current data call if you are on one.

Abort current command

To abort the current command:

1. Hold down the control key and press Z.

   RELEASED

2. <CR>.

   ENTER NUMBER OR H (FOR HELP):

Note: This command will not work during an active data call. First you must release the call.

Auto Dial

To use:

1. A (Auto Dial) <CR>.

   CALLING

To define (change):

1. M (Modify) <CR>.

   (Terminal displays Modify menu)

2. A (Auto Number) <CR>.

   AUTO DIAL NO.:

3. Enter Auto Dial number and <CR>.

Speed Call

To use:

1. S (Speed Call) <CR>.

   ENTER ACCESS CODE:

2. Enter the access code (Speed call code) and <CR>.

   CALLING

To define (change):

1. M (Modify) <CR>.

   (Terminal displays Modify menu)

2. S (Speed Number) <CR>.

   ENTER ACCESS CODE:

3. Enter access code (Speed Call code) of the number you wish to define or change. It can be one, two, or three digits.

   ENTER NUMBER: xxx-

   (xxx = access code)

4. Enter extension number (DN) to be represented by the access code, and <CR>.

Script File

To use:

Enter script name and <CR>.

The MCA will connect to the far end data device and the script will be executed automatically. In other words, the MCA will follow the same steps you took when writing the script. It works like a macro file.

To define:

1. M (Modify) <CR>.

   (Terminal displays Modify menu)

2. F (Script File) <CR>.

   (Terminal displays Script File menu)

3. L (Learn Script) <CR>.

   (Terminal displays Learn Script menu)

4. A (Learn Auto Dial script) <CR>.
   Or
   S (Learn Speed Call script) <CR>. Enter Speed Call code at prompt ENTER ACCESS CODE: and <CR>.

   ACTIVATE LEARN MODE? (Y/N)

5. Y <CR>.

   ENTER SCRIPT NAME:

6. Enter name you want to call the script by and <CR>.

   ESCAPE CODE =[+] MODIFY (Y/N)

   (+ = escape code key symbol)

7. N <CR>.

   (Terminal displays Main menu)

8. Make a data call, following the exact procedure you wish the script to remember. Press Escape twice (to enter privacy mode for password protection. Press <CR> to exit privacy mode.

9. When you wish to end the script, press Escape three times in quick succession. Continue normally.

10. Release the data call and immediately place an Auto Dial or Speed Call for which the Learn Script process was set up. At this point the script is saved.

Script File directory

To view a list of your script files:

D (Script File directory) <CR>.

Your terminal lists the script file names and length in bytes, plus each script's associated speed call access code (an A in the access code column stands for the Auto Dial script).

See example on this page.

SCRIPT FILE DIRECTORY

ACCESS CODE	SCRIPT NAME	LENGTH(Bytes)
A	EMAIL	262
21	MAINFRAME	455
33	DBASE	345

Delete Script File

1. M (Modify) <CR>.

   (Terminal displays Modify menu)

2. F (Script File) <CR>.

   (Terminal displays Script File menu)

3. D (Delete Script File) <CR>. (Terminal displays Delete menu)

4. A (Auto Dial) <CR>.
   Or
   S (Speed Call) <CR>. Enter speed Call code at prompt:

   ENTER ACCESS CODE:

   SCRIPT [script name] EXISTS

   DELETE? (Y/N)
5. Y <CR>. DELETING.

Escape code

To change Escape code:

1. M (Modify) <CR>.

   (Terminal displays Modify menu)
2. F (Script File) <CR>.

   (Terminal displays Script File menu)
3. E (Escape Code) <CR>.

   ESCAPE CODE :[+] MODIFY (Y/N)
4. Y <CR>.

   ENTER ESCAPE CODE:
5. Enter new Escape code (can be a control character) <CR>.

There are three uses for the Escape code character:

--One escape character inserts a pause in a script file.

--Two escape characters puts you into privacy mode, useful for skipping part of a script file procedure for password protection. Hit <CR> to leave privacy mode.

--Three escape characters saves a script file to the MCA EEPROM.

Note: A guard timer of one second distinguishes the escape sequences. In other words, one escape character is not interpreted as a pause until a full second elapses in which you do not enter another escape character.

Manual answer (asynchronous)

1. M (Modify) <CR>.

   (Terminal displays Modify menu)
2. M (Manual Answer) <CR>. MANUAL ANSWER (Y/N).
3. Y <CR>.

   Incoming data calls will give you this prompt:

   INCOMING CALL. ANSWER (Y/N)

   If you respond Y to the prompt in step 2, an incoming data call will connect automatically and you will receive the prompt:

   INCOMING CALL CONNECTED

Remote Loopback

To perform a remote Iccpback test:

M (Modify) <CR>.

(Terminal displays Modify menu)

R (Remote Loopback) <CR>.

Remote Ioopback will be enabled for the next data call only.

This feature is useful for diagnostic purposes.

Ring Again

When the far end number is busy you receive the prompt:

BUSY, RING AGAIN? (Y/N)

or

BUSY, PREVIOUS RING AGAIN ACTIVE, REPLACE? (Y/N)

1. Y <CR>. Ring Again is activated and will notify you when the far end is free.

   RING AGAIN PLACED

   When the far end data device is free you receive the prompt:

   DATA STATION NOW AVAILABLE, PLACE CALL (Y/N)

2. Y <CR>.

Note: You must answer Ring Again with 30 seconds after you are prompted or it cancels. You can only set Ring Again to watch one busy line at a time.

Ring Again (synchronous)

Synchronous calls can only be made from the telephone keypad.

Display parameters (asynchronous)

To list information about MCA configuration from the terminal:

P (display parameters) <CR>.

The following example shows the items listed with possible values for each.

The first three parameters give information on the current version MCA you have (they do not change).

For more detailed descriptions of these parameters, see Keypad dialing.

Engineering code = NT2KO047 Release = 01

Firmware = 3.5

Baud Rate = 19200

Parity = ODD

DTR = ON (Data Terminal Ready) DCD -- ON (Data Carrier Detect) VLL = OFF (Virtual Leased Line) Hotline = OFF

Remote Loopback = OFF Manual Answer = OFF

Data Directory Number = 4000 Auto Dial No. = 3600

Keypad Dialing Commands

Keypad dialing refers to the commands you can invoke from your phone's keypad. The top right-hand function key on your phone is called the **Program** key, or P-key. In the commands listed below, the number is the command number (or symbol) dialed on the keypad after dialing

To use Keypad dialing:

1. Press **Program**.
2. Dial the command number.
   Follow the screen prompts for additional command parameters (if needed).

3 Press **Program** to execute.

- Manual Data Call

\+ - Release Data Call

0 5 - Language Selection

2 0 - Asynchronous Mode

2 1 - Synchronous Mode

2 2 - Baud Rate

2 3 - Space Parity

2 4 - Odd Parity

2 5 - Even Parity

2 6 - Mark Parity

2 7- Host Mode

2 8 -Terminal Mode

2 9 - Hotline Off

3 0 - Hotline On

3 1 -Virtual Leased Line Off

3 1 -Virtual Leased Line On

3 2 - Forced DTR Off

3 4 - Forced DTR On

3 5 - Dynamic Carrier Detect Off

3 6 - Dynamic Carrier Detect On

3 7 - Remote Loopback Off

3 8 - Remote Loopback On

3 9 -Cancel Data Ring Again

4 0 - *Full Duplex*

4 1 - Half Duplex

4 2 - Modem Mode

4 3 - Network Mode

4 4 - Internal Clock

4 5 - External Clock

4 6 - PSDS Mode Off

4 7 - PSDS Mode On

4 8 - Enable Echo Canceller

4 9 - Disable Echo Canceller

5 0 - SL-1 Mode

5 1 - SL-1/DMS-100 Mode

5 4 - V.25 bis mode Off

5 5 - V.25 bis mode On

5 6 - Bisync On

5 7 - HDLC On

5 8 - Assert RTS Off

5 9 - Assert RTS On

6 0 - Auto Dial Programming

6 1 - Auto Dial Call

6 2 - Data Parameter Display

6 3 - EIA leads Status Display

6 4 - Monitor data call

6 5 - Reset to Default Parameters

6 6 - Emulation selection

6 7 - Lock/unlock data parameters

6 8 -VDN Key Assignment

Note 1: If you do not have a Display on your phone, the following commands do not apply: **Program 6 2, Program 6 3, Program 6 4.**

Note 2: Use **Program 5 5** and **Program 5 7** (*HDLC On*) for Group IV FAX. Use **Program 5 5** and **Program 5 6** (Bisync On) for video.

Note 3: A display is needed to use synchronous mode.

Note 4: When V.25 **Program 5 5** is turned on, the MCA automatically switches to synchronous mode. No auto-answer is provided while in the V.25 mode.

Note 5: If an MCA in synchronous mode calls another data module in asynchronous mode, the call is connected. You must drop the call.

Parity and Character Length on the MCA

In Asynchronous mode the MCA is designed to work with 8 bit data characters. You can use various parity settings, but the total character length must equal 8 bits. The MCA accepts the following character lengths and parity settings:

8 data bits, no parity bit

7 data bits + one bit of Even parity 7 data bits + one bit of Odd parity 7 data bits + one bit of Mark parity 7 data bits + one bit of Space parity

For ASCII data, 8 bits no parity equals 7 bits with space parity.

The MCA controls parity only when it displays prompts before the data call is established. In this case, the MCA outputs the prompts to the DTE with the parity settings defined with P23-P26, or it determines parity automatically with the <CR>. <CR> sequence.

Once the data call is established, the MCA does not check or regenerate parity, The MCA will transport the 8 bit character to the far end with the parity unchanged.

Voice call origination

By using a special cable, the MCA can communicate with two DTEs at the same time. The primary channel is the main communication channel offering MCA features. The second channel can respond to Voice Call Origination commands (VCO) only. This provides the ability to make a voice call across the second channel while simultaneously using the primary channel to transmit or receive high speed data.

Below is the pinout list to connect the second channel.

Note: The VCO baud rate is 2400.

RS-232 pin		V.35 pin
TxD	14	18
RxD	16	21
Gnd	7	7

Configuring the MCA with a V.35 Interface:

To use the MCA with a V.35 interface, an adapter cable is required to convert the D-25 into the 34 pin connector.

Note: This does not apply to asynchronous mode.

The female cable ordering number is A0408927, and the male cable is number A0408928.

Remove the two 12 pin jumpers inside the MCA, and install the V.35 sockets.

***Note*:** The MCA is shipped with jumpers configured for RS-232. Data transmissions higher than 19.2 Kbps should use V.35 mode. If the jumpers are left in V.35 mode, and you try to use asynchronous transmission, the MCA will look as if it is locked up.

Configuring for V.35 Applications

The MCA is shipped with jumpers configured for RS-232. To configure V.35 in the field you must install jumper plugs in V.35 mode as follows (please refer to the MCU/MCA reference guide (P0743724), or NTP553-2731-109 for jumper locations):

New units, assumes new unit, not previously installed.

1 Connect MCA to telephone jack.

2 Press **Program** and dial **2** / **1** to select SYNCHRONOUS mode.

3 Press **Program** and dial **2** / **2** to select Synchronous BAUD RATE.

4 Move jumpers from RS-232 sockets to V.35 sockets.

5. Run V.35 application to confirm proper operation.

Existing units, if the MCA has been previously installed in any application.

1. Ensure that the MCA has jumper plugs in the RS-232 sockets and not in the V.35 sockets.

2 Follow steps 1 through 5 in the previous section on configuring new units.

Appendix C Supported Features

Appendix C identifies the differences in Desktop TAPI SP 1.6 and Destkop TAPI SP for MCA 2.0. In addition, this appendix lists the features, line functions, and display formats that the TAPI SP for MCA supports.

Differences - Desktop TAPI 1.6 Vs TAPI MCA 2.0

- **LINECALLINFO**

  -- Generally, CallerID information is sent up to an application using LINECALLINFO messages as soon as the information is available.

  -- Typically, an application will see multiple LINECALLINFO messages throughout the progress of an incoming or outgoing call.

- **Transfers**

  -- All transfer operations will utilize the Transfer key only, if present. It will not simulate Transfer using a Conference Key.

  -- lineCompleteTransfer() now supports dwTransferMode=CONFERENCE.

  -- The Service Provider cannot track a Transfer that is manually completed to a Conference. The Service Provider will treat this as an aborted Transfer and will simply IDLE the consult call handle.

  -- No consult call handle is presented to an application when lineBlindTransfe()r is invoked.

  -- If lineBlindTransfer() fails for any reason, the consult call will immediately be dropped by the Service Provider.

- **Conferences**

  -- Conferences, which are started manually by the user, are tracked by the Service Provider and can be completed using lineAddToConference().

- **Call Progress of consult calls**

  -- Consult calls cannot be tracked accurately for far-end connect.

  -- After reasonable timeouts, call progress events are simulated through LINECALLSTATE messages. These will be detailed in the Programmer's Guide.

  -- Telephone Set Add-on Modules are not supported

  -- The TAPI SP will not recognize DNs on an add-on module.

Desktop TAPI SP for MCA Feature Support

TAPI applications can do screen pops (database queries of a Calling or Called number) by using information delivered by the TAPI SP for MCA. The TAPI SP for MCA receives the information from the M1 Option 11-81 PBX via the following configuration.

1. Receipt of IANI digits (Calling numbers) only from Telco over IANI enabled DID or Tie trunks that auto-terminate at an ACD DN (Agents set).
2. Receipt of CLID digits (CLID-Calling number) only from Telco or private network over ISDN PRI trunks that have CLID enabled.
3. Receipt of DNIS digits (Called number) only from Telco over DID or Tie trunks that auto-terminate at an ACD DN Agents set or are routed via the Incoming Digit Conversion (IDC) feature to specified ACD DNs base on the dialed number.
4. The combination of configurations 2 and 3 above allows screen popping on Calling number (via ISDN PRI/CLID) and Called number (via DNIS) simultaneously.

The TAPI SP for MCA delivers Calling Party Name Display and Network Calling Party Name Display information if provided over ISDN PRI trunks to TAPI applications.

Note: When an ACD agent transfers a call that has already received the Calling/Called number, the party that is receiving the transferred call will also receive the Calling/Called number (because M1 passes along the CLID and DNIS digits); giving the appearance of an Agent-to-Agent screen transfer. TAPI applications that do screen popping find this useful.

The TAPI SP for MCA currently supports the features listed in the “Features Supported on the Meridian 1/SL-1” section.

Features Supported on the Meridian 1/SL-1

Features	Nortel's TAPI SP 1.0	Nortel's Desktop TAPI SP 1.6	TAPI SP for MCA version 2.0
Make Call	Yes	Yes	Yes
Answer Call	Yes	Yes	Yes
Hold and Un-hold call	Yes	Yes	Yes
Blind Transfer	Yes	Yes	Yes
Supervised Transfer	Yes	Yes	Yes
Conference Call (3 party & 6 party)	Yes	Yes	Yes
Consult Call	Yes	Yes	Yes
Ring Again (Activate & Cancel)	Yes	Yes	No
Call Pickup	Yes	Yes	No
Call Park (Park & Retrieve Park)	Yes	Yes	No
Call Forcing *	Yes	Yes	No

- Meridian 1 PBX only

Supported Line Functions

- lineAccept
- lineAnswer
- lineClose
- lineCompleteTransfer
- lineDial
- lineGenerateDigits
- lineGetAddressID
- lineGetCallAddressID
- lineGetCallStatus
- lineGetDevConfig
- lineGetID
- lineGetNumAddressIDs
- lineMakeCall
- lineOpen
- lineSetDefaultMediaDetection
- lineSetStatusMessages
- lineSetupTransfer
- lineUnhold
- lineConfigDialogEdit
- lineAddToConference
- lineBlindTransfer
- lineCloseCall
- lineConfigDialog
- lineDrop
- lineGetAddressCaps
- lineGetAddressStatus
- lineGetCallInfo
- lineGetDevCaps
- lineGetExtensionID
- lineGetLineDevStatus
- lineHold
- lineNegotiateTSPIVersion
- linePrepareAddToConference
- lineSetDevConfig
- lineSetupConference
- lineSwapHold
- lineSetCurrentLocation

Supported Display Formats

Symposium TAPI MCA 2.0 interprets only information presented to the bottom line of the phone set's display. DNIS, which appears on the top line, is not captured or interpreted. Calling ID and Called ID information delivered to the TAPI application follows these supported display formats.

- **General format numbers can have the following formats:**

  -- xxxx // All digits

  -- Hxxxx // H immediately followed by digits only until WS

  -- Hxxx-xxxx // H immediately followed by digits separated by a single dash until WS

- **General format numbers for both incoming an outgoing calls**

  -- Format1: xxxx

  -- Format2: xxxx yyyy

  -- Format3: xxxx reason

  -- Format4: xxxx yyyy reason

- **Incoming call formats**

  -- All numbers must contain only valid digits

  -- Format11: xxxx-xxxx // Trunk

  -- Format12: xxxx-xx-yyyy // Trunk + DNIS, yyyy=DNIS

  -- Format13: xxxx-xx-yyyy zzzz // Format12 + ACDQ, zzzz=ACDQ

  -- Format14: xxxx-xx-yyyy zzzz reason // Format13 + reason

  -- Format15: xxxx-xxxx yyyy // Trunk + ACDQ

  -- Format16: xxxx -yyyy // Caller + DNIS, yyyy=DNIS

- **Outgoing call formats**

  -- All numbers must contain only valid digits

  -- Format21: xxxx-yyyy // xxxx = ACDQ, yyyy = Agent Position

  -- Format22: zzzz xxxx-yyyy // zzzz = Dialed DN + Format21

  -- Format23: xxxx-yyyy reason // Format21 + reason

  -- Format24: zzzz xxxx-yyyy reason // Format22 + reason

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Version 6.00
July 1998

Glossary of Terms

ACD

Automatic Call Distribution. This is a telephone system feature that automatically routes calls to agents.

ANI

Automatic Number Identification. This is another name for call ID (CLID). ANI is typically a 10-digit number that is delivered by the network to identify the incoming caller.

CLID

Caller identification. This is another name for ANI.

CTI

Computer Telephony Integration.

DNIS

Dialed Number Identification Service.

DNs

Directory Numbers.

IDC

Incoming Digit Conversion.

MBS

Meridian Business Set.

MCA

Meridian Communications Adapter.

MMT

Meridian Modular Telephone.

Nortel Developer Support Hotline

For additional information or help, call (800) NT-4CTI-0.

SCCS

Symposium Call Center Server

Service Providers

Software files needed to enable TAPI applications to communicate with the physical telephony device.

SP

Service Providers.

TAPI

Telephony Application Programming Interface.

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Symposium TAPI MCA 2.0 Reference Guide

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