



KX Series PBX TAPI Service Provider Installation Manual

TSP Version: 4.3.0.17 or later

Revision: 4.3.0.1

March 2016

Introduction

About TSP

Panasonic TAPI Service Provider (TSP) for KX-TDA/TDE/NCP/NS/NSX Series PBX is a driver that provides you with a TAPI Interface.

About this manual

This manual describes how to install and set up Panasonic TSP.

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NOTES

Description related USB in this manual is applied to **KX-TDA series PBX only**.

Note: USB connection is not supported on 64bit Windows.

Revision History of this Document

Revision	Date	Changes
4.2.0.0	19-Jul-13	-
4.3.0.1	8-Mar-16	<p>1. Supports KX-NSX series PBXs. Refer to 1.2. PBX Settings and 3.1.1 LAN Connection.</p> <p>2. The “User Container Enable” option is added Refer to “j. User Container Enable” in 3.4. Other Parameters.</p> <p>3. Naming rule of TSP log file is changed to show the logged date & time. The log data retention period is extended from 4 days to 7 days. Refer to 3.2. Log Settings.</p> <p>4. Additionally supports Microsoft Windows 10 Refer to 1.1. System Requirement.</p>

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1. Before Installing

1.1. System Requirement

Required Operating System

- Microsoft[®] Windows Server[®] 2012 (64-bit)
(Server core installation is NOT supported)
- Microsoft Windows Server 2008 (both 32-bit and 64-bit)
- Microsoft Windows[®] 10 (both 32-bit and 64-bit)
- Microsoft Windows[®] 8 /8.1 (both 32-bit and 64-bit)
(Modern UI is NOT supported)
- Microsoft Windows 7 (both 32-bit and 64-bit)
- Microsoft Windows Vista[®] (32-bit only)

Note

- **Panasonic TSP does not support the Remote TSP function supported by Microsoft OS.**

Minimum PC Hardware Requirements

- Any hardware which is required by the application used with Panasonic TSP shall be satisfied.
- HDD 400 Mb free disk space for Panasonic TSP, plus free disk space the application requires.

Note: Additional HDD space may be required for recording TSP logs.

1.2. PBX Settings

Supported PBX Types

- Supported PBX
KX-TDA series, **KX-TDE** series, **KX-NCP** series, **KX-NS** series and **KX-NSX** series PBXs.
- Panasonic TSP uses TCP/IP for connecting to the Panasonic PBX. USB is also available to connect to KX-TDA series PBXs.

TCP/IP Setting

- Before installation, please make sure of the PBX's IP address and its CTI port number. By default, the CTI port is 33333.
- When connecting to a KX-TDA series PBX, the following LAN interface card shall be installed on the PBX.

PBX	LAN Interface card
KX-TDA100/200/600	CTI Link Card
KX-TDA30/50	IP Gateway Card

- KX-NS/NSX series PBXs require the activation key to use CTI interface. For more details, please refer to the relevant installation manuals.
- When you use CTI enhanced features with the following PBXs, you may need **SD Memory Card** or **activation key** for software upgrade depending on your application.

PBX	Required SD Card or Activation Key
KX-TDA30	KX-TDA3920
KX-TDA50	KX-TDA5920
KX-TDA100/200	KX-TDA0920
KX-TDA600	KX-TDA6920
KX-TDE100/200	KX-NCS4910,
KX-TDE600	KX-NCS4950
KX-NCP500/1000	KX-NCS3910

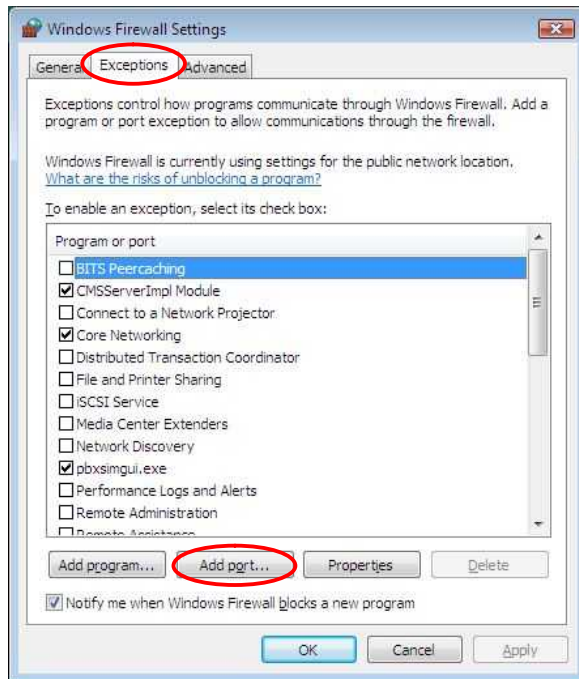
USB Setting

- In order to use the USB connection with a KX-TDA PBX, USB drivers (Version 2.0.0.7 or later) for KX-TDA series PBXs must be installed on the computer.
- And when there are two or more USB connections, a unique **USB serial number** shall be assigned for each KX-TDA PBX by TDA Maintenance Console. For more details about installation of the TDA PBX USB driver, please consult related installation manual.

1.3. Firewall Settings for Windows Vista Only

When you install Panasonic TSP on Windows Vista PC and use LAN to connect to the PBX you may need to configure Windows Firewall as follows.

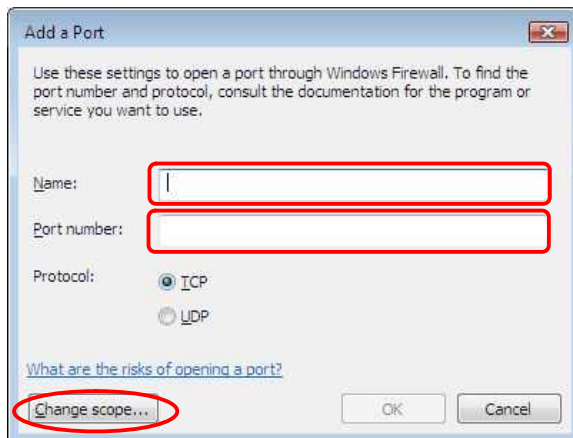
1. Open “Windows Firewall Settings” dialogue from Control Panel, and select “Exceptions” tab.



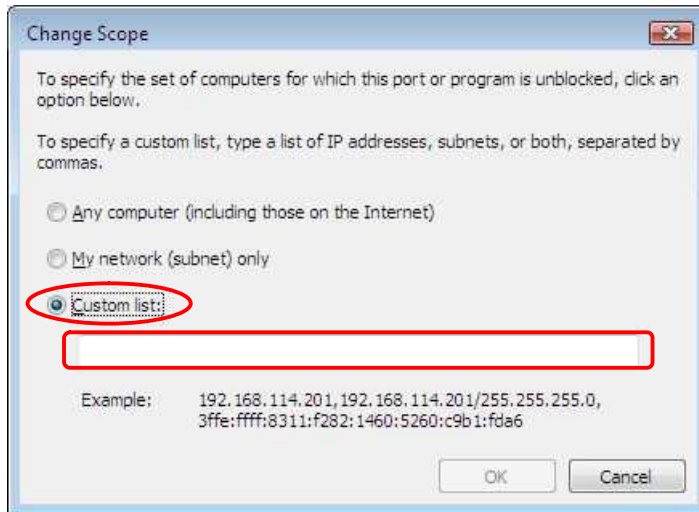
2. Click the “Add port...” button. Then type as follows.

Name : Panasonic TSP

Port number: 33333 (If you change the default port number, type the number to which you have changed)



3. Click the “Change scope...” button, and select “Custom list:”. Then type the PBX’s IP address.



4. Click OK to close the “Change Scope” dialogue.
5. Click OK to close the “Add a Port” dialogue.
6. Click OK to close the “Windows Firewall Settings” dialogue.

2. Installing TSP

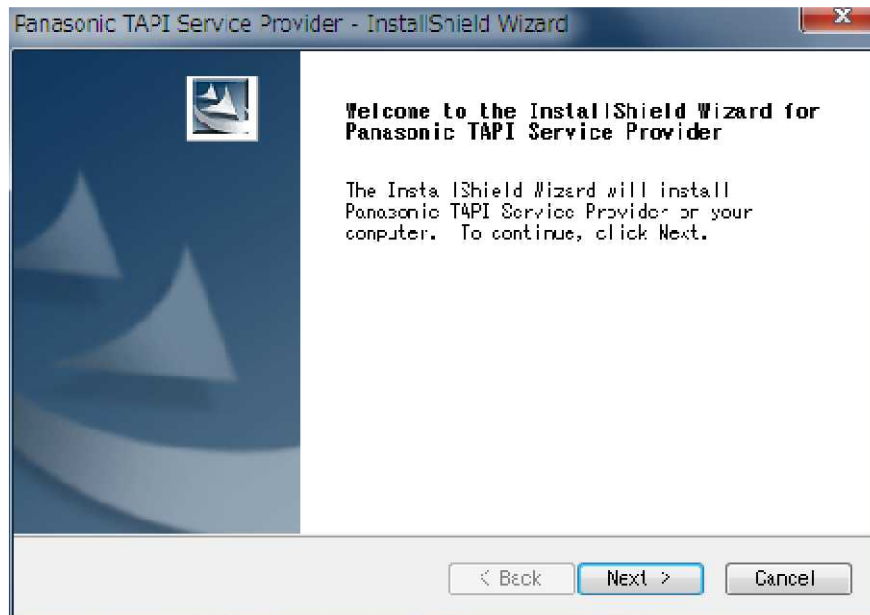
2.1. Installing Panasonic TSP

To install or uninstall the software you must be logged in as a user with Administrator privilege. When other version of Panasonic TSP is already installed on your PC, please refer to section 2.3 for the detailed steps of overwrite installation

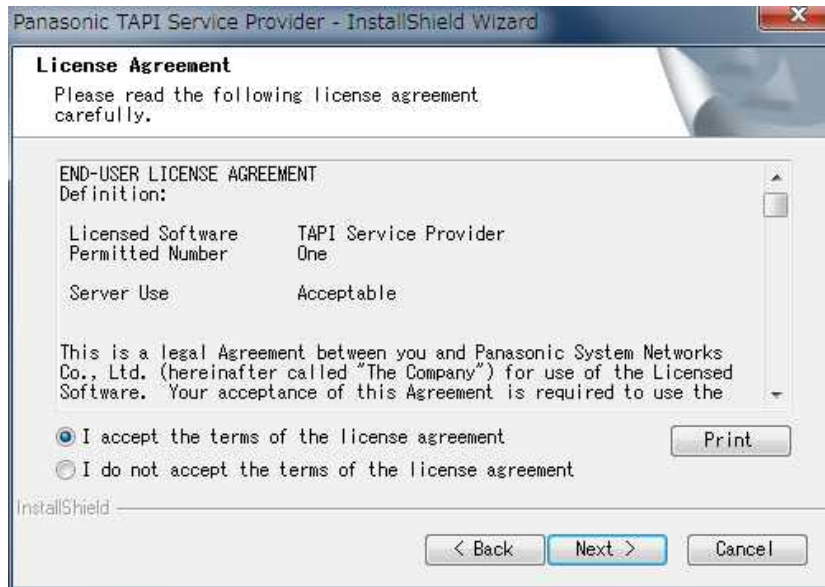
How to Install TSP

1. Double-click the setup file. The setup file varies depending on the OS. When you use a 32-bit operating system, select the file "panasonic_tsp_instx86_4xxx.exe". When you use a 64-bit operating system, select the file "panasonic_tsp_instx64_4xxx.exe". And click "Next" to continue installation. Click "Cancel" to abort.

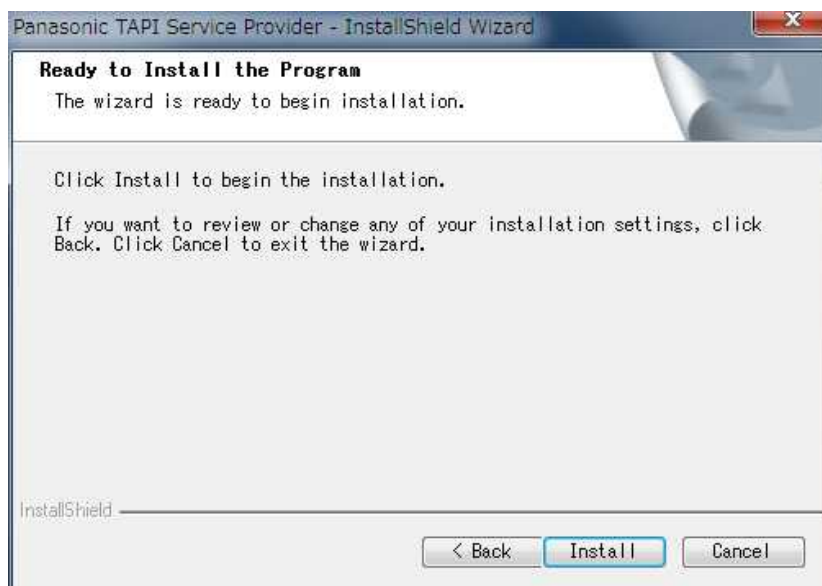
("xxx" will be different number depending on time when TSP is released)



2. You will then be shown the License Agreement. After reading the agreement, select the “I accept the terms of the license agreement” option to accept its terms and click **“Next”** to continue the installation. If you do not accept its terms, click **“Cancel”**.
If you want to print out the agreement, click **“Print”**.



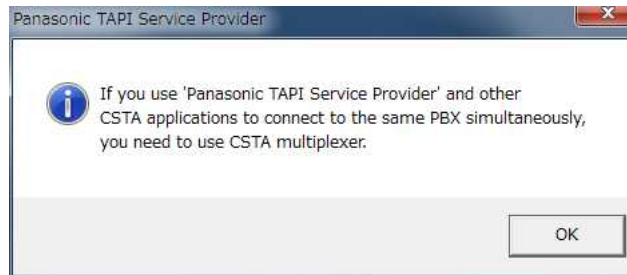
3. Click **“Install”** to start installation. Click **“Cancel”** to abort installation. Click **“Back”** to go back to previous step.



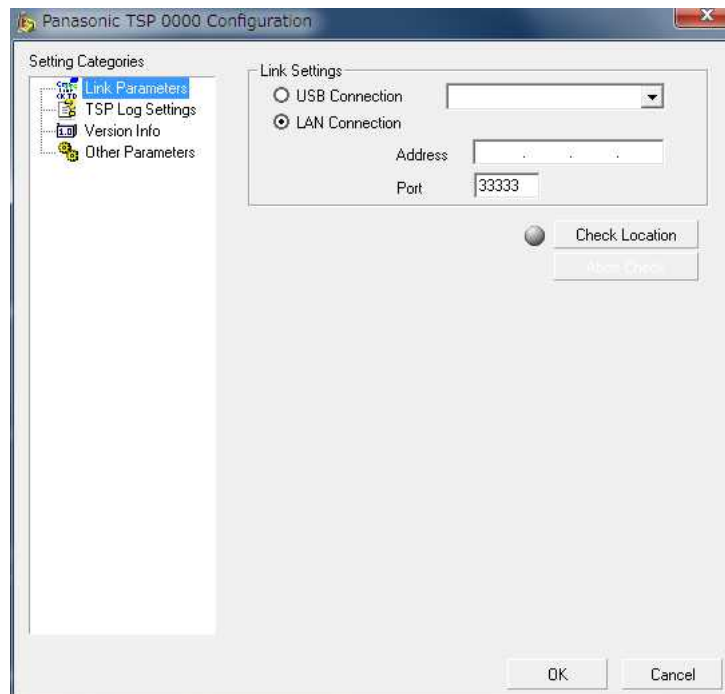
4. If KX-TDA USB driver is not installed on your computer, a dialogue showing “USB Driver is not installed’ may appear. Press “**OK**” to continue.

Note: USB connection is not supported on 64bit Windows.

5. The following message will appear in order to note that Panasonic TSP and a CSTA application cannot be used in parallel without CSTA multiplexer. Press “**OK**” to continue.



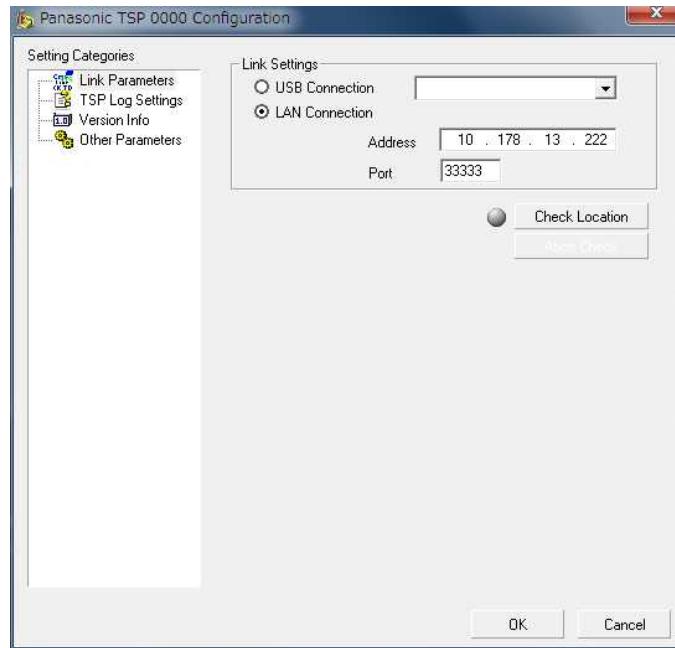
6. By default one TSP instance will be installed and registered with TAPI. After the registration is completed following dialogue will prompt you to configure parameters. Pressing “**OK**” will update settings you have just changed. Pressing “**Cancel**” will leave default configuration(Link setting is empty).



When you use LAN connection, select “LAN Connection” and set IP address and TCP port of the PBX. See **3.1.1** for more details.

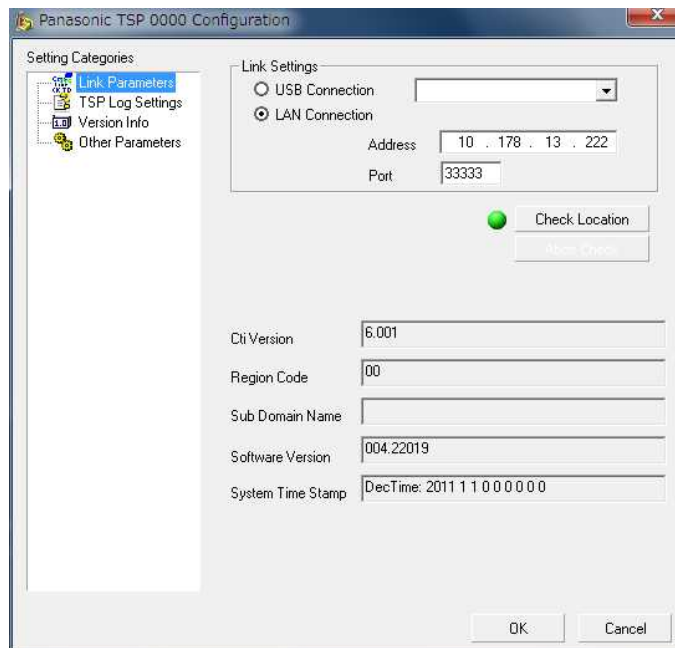
When USB connection is used, select “USB Connection”. See **3.1.2** for more detail.

7. After entering the IP address and TCP port of PBX, click **“Check Location”** to verify the connection to the PBX.

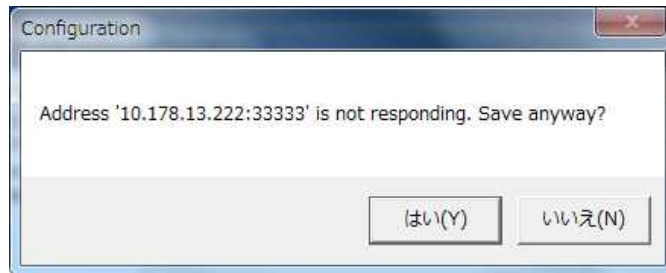


When the connection is successful, the following dialogue containing system information gathered from PBX will appear. System information gathered from PBX may help you identify the PBX that you will use. When the connection is successful, the GRAY lamp at the left side of the **“Check Location”** button will turn to GREEN.

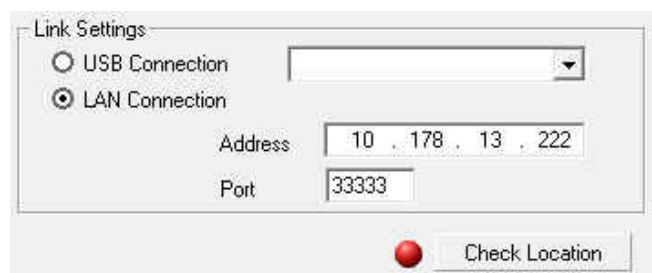
To abort **“Check Location”**, click the **“Abort Check”** button.



When the connection to the PBX is not successful, a messagedialogue will appear.

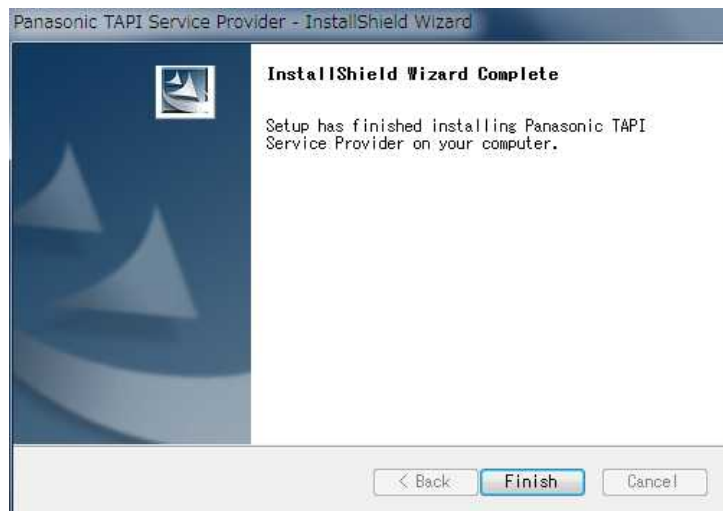


Then the GRAY lamp at the left side of "**Check Location**" button will turn to RED.



In this case, please make sure the IP address and the TCP port number of the PBX are correct, and then check network connection

8. Click "**Finish**" to complete the installation.



9. Install program prompt user to reboot PC: Press “Yes” to reboot PC.



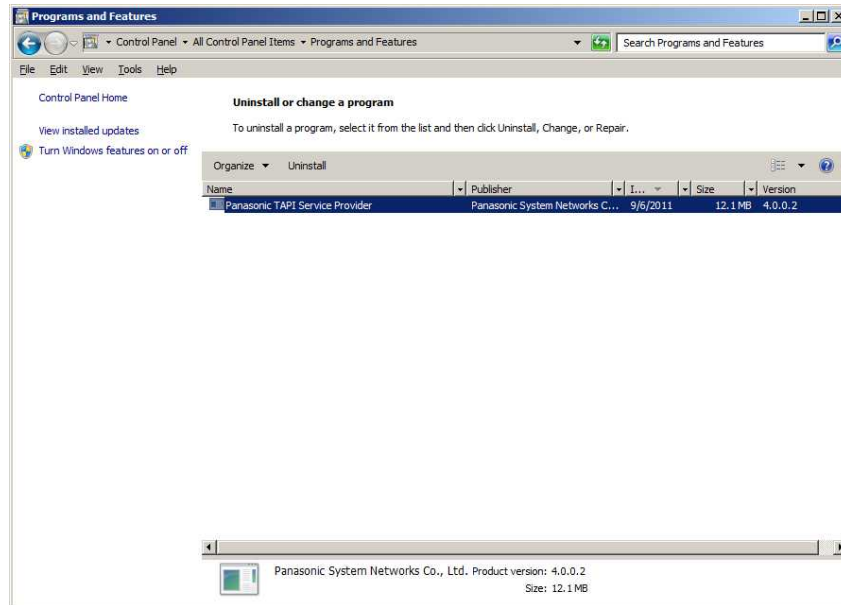
Notes:

During installation a folder is created by default under <Program Files>Panasonic\KX-TDA TSP. This folder contains a copy of End User License Agreement.

2.2. Uninstalling Panasonic TSP

How to Uninstall TSP

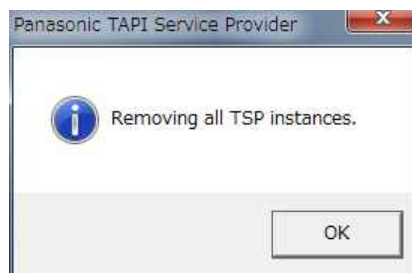
1. To do that, go to Control Panel, Programs and Features, select Panasonic TSP and click “Change/Remove” or “Uninstall/Change”.



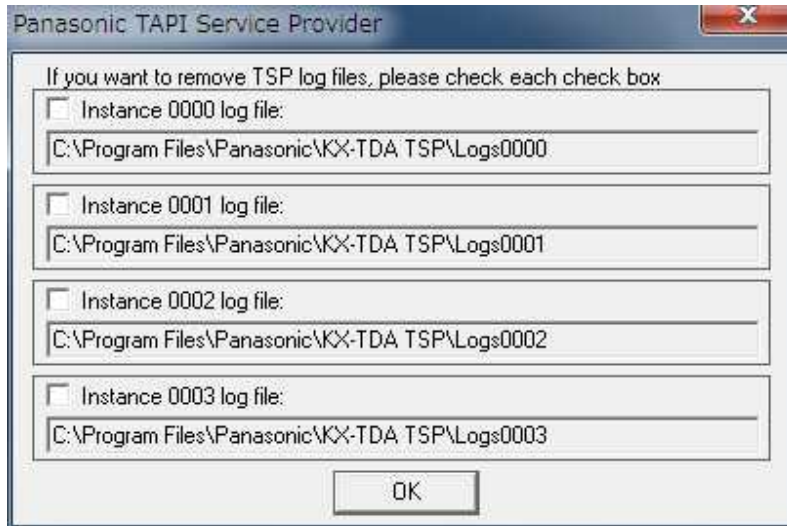
2. Click “Yes” to uninstall, or “No” to abort.



3. Click “OK” to continue.



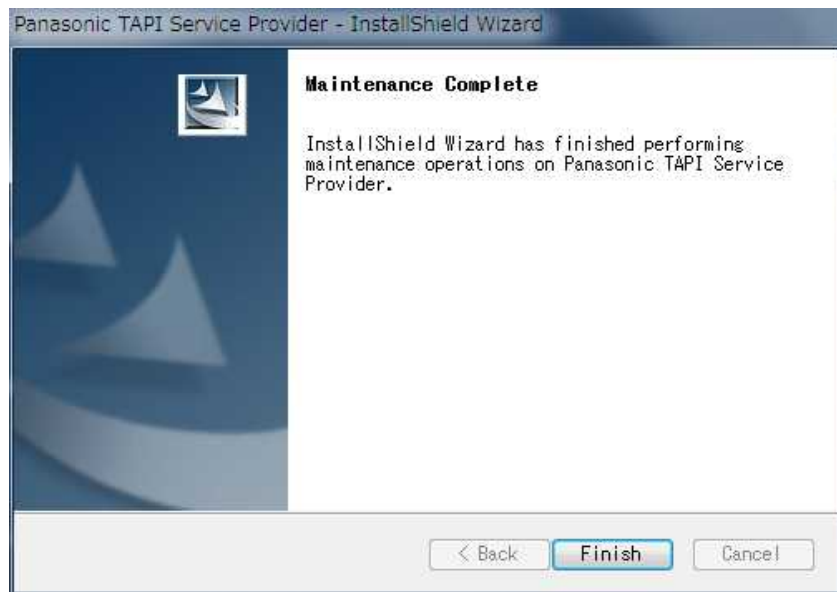
4. If you have set Panasonic TSP to save data to log files the following dialogue is displayed. If you want to delete log files, tick all which apply and press "OK".



5. User is prompted to close any application that may use Panasonic TSP. Press "OK" to continue.



6. Click **“Finish”** to complete uninstalling.



7. User is prompted to restart computer. Press **“Yes”** to restart.



2.3. Overwrite Installing Panasonic TSP

IMPORTANT

It is NOT possible to overwrite the Panasonic TSP(1) if the overwriting Panasonic TSP is older than the currently installed one;or (2) if the overwritten Panasonic TSP is the version 3.3 or before.In either case, please uninstall the currently installed one first.

How to overwrite Panasonic TSP

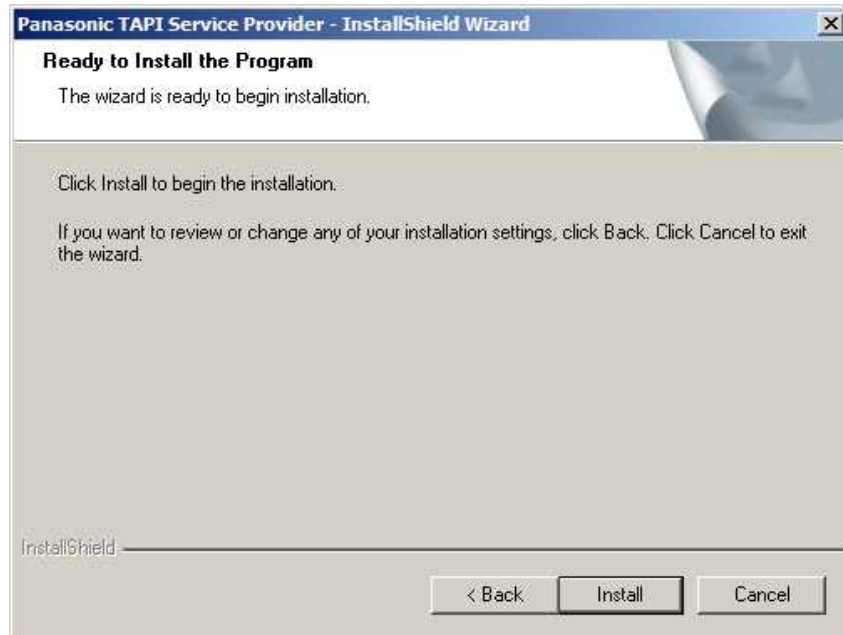
1. Double click the setup file.
2. Click **“Yes”** to continue the overwrite installation or **“No”** to abort.



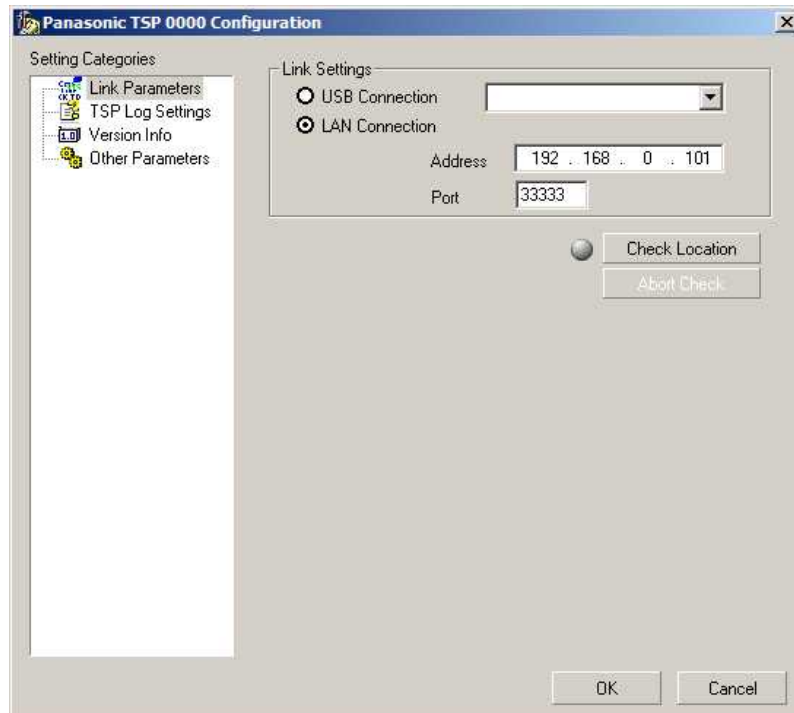
3. Click **“Next”** to continue the overwrite installation or **“Cancel”** to abort.



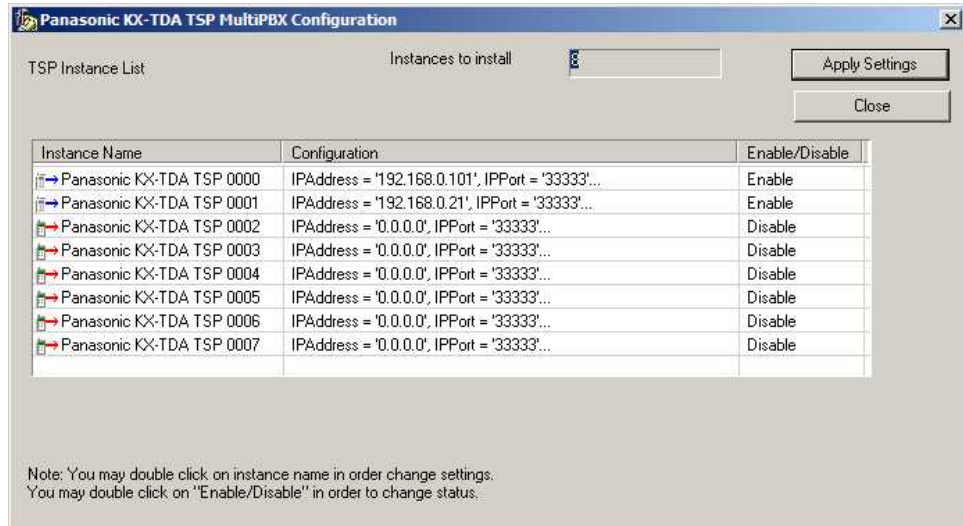
4. Click **“Install”** to start installation. Click **“Cancel”** to abort. Click **“Back”** to go back to previous step.



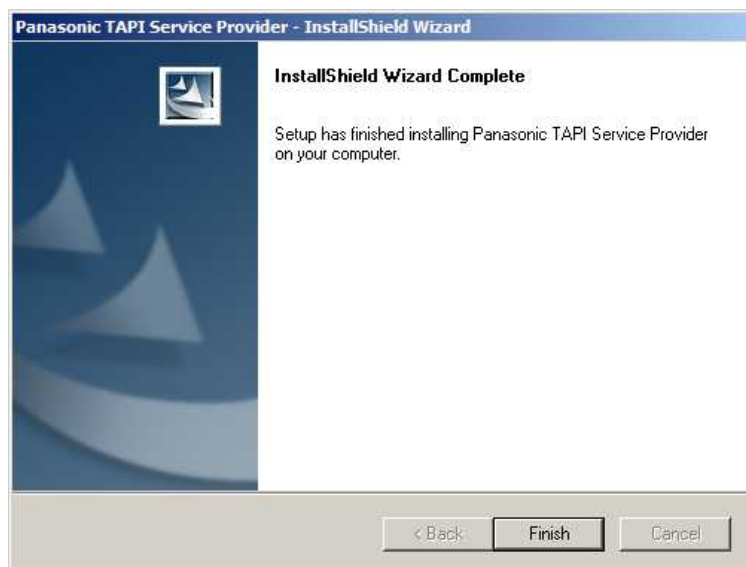
5. The following dialogue is displayed. The existing configuration is taken over. Please refer to section 2 for the configuration. When you do not need to change the configuration, press **“OK”**.



- If more than one Panasonic TSP instances have been used the following dialogue is displayed. The existing configuration is taken over. Please refer to section 3.5 for the configuration. When you do not need to change the configuration, press **“Apply Settings”**.



- Click **“Finish”** to complete the installation



8. Install program prompts user to reboot PC. Press **“Yes”** to reboot PC.



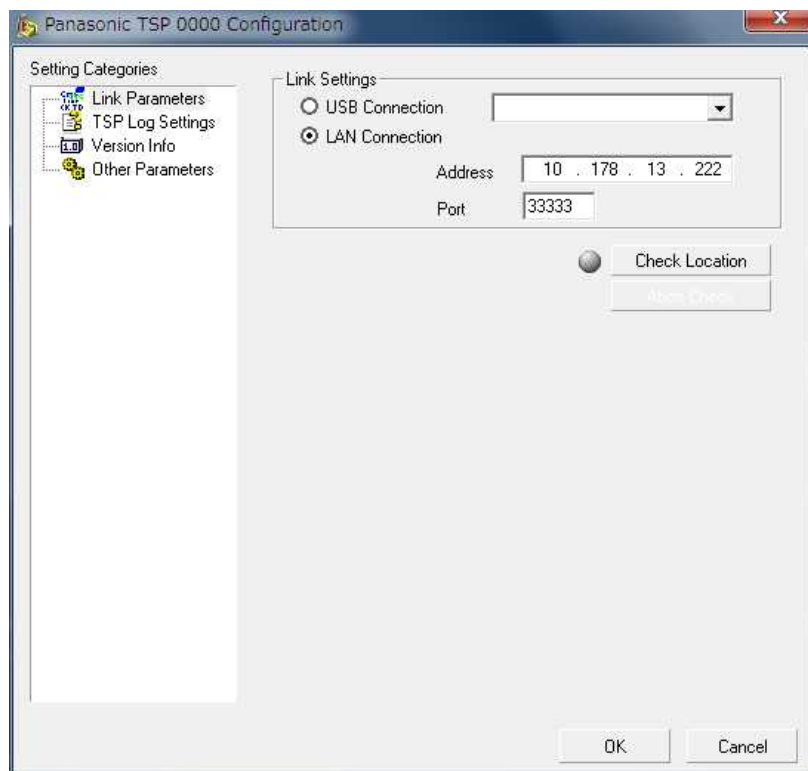
3. TSP Settings

To change TSP settings, open "**Phone and Modem Options**" from Control Panel, and select the "**Advanced**" tab.

Then select "**Panasonic TSP0000**" and click the "**Configure**" button.

3.1. Link Parameters

"*Link parameters*" configures how Panasonic TSP will establish communication with the PBX.



3.1.1 LAN Connection

When Panasonic TSP uses LAN to communicate with the PBX, select **LAN Connection** and enter **Address** and **Port**.

“Address” is the IP address of the PBX in dot format, and **Port** is the TCP port to which the PBX is listening..

PBX	LAN Interface Card
KX-NSX Series	Mother board
KX-NS Series	Mother board
KX-NCP500/1000	IPCMPR Card
KX-TDE100/200/600	IPCMPR/IPCEMPR Card
KX-TDA100/200/600	CTI Link Card
KX-TDA30/50	IP Gateway Card

Input Example:

E.g., Address=10.178.13.222 Port=33333

Link Settings

USB Connection

LAN Connection

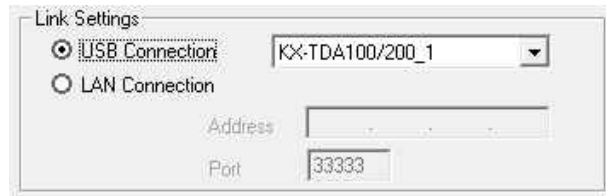
Address: 10 . 178 . 13 . 222

Port: 33333

Check Location

3.1.2 USB Connection

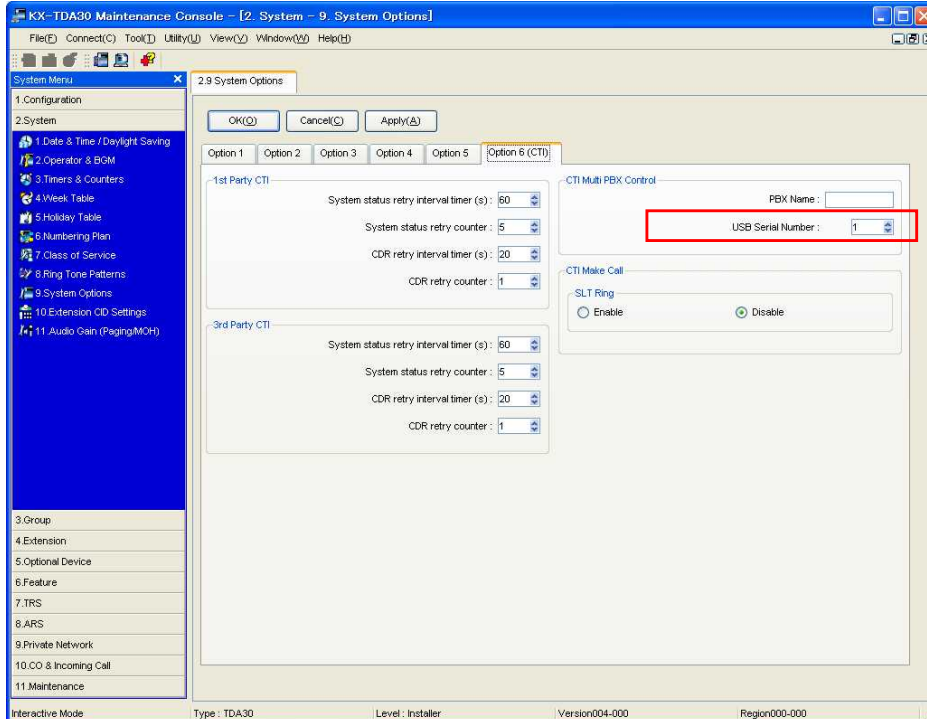
When Panasonic TSP uses USB to communicate with the PBX, select “**USB Connection**”.



Remarks:

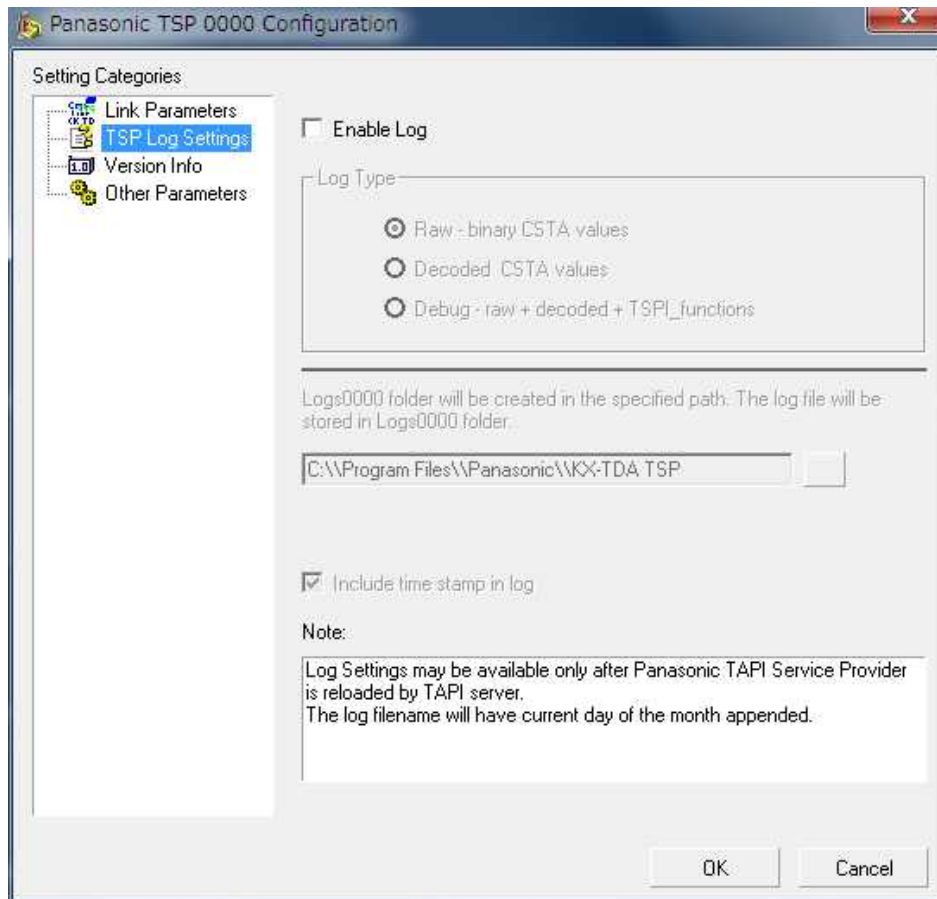
- 1) PBX software version 2.0 or later is required to use multi-PBX connection.
- 2) **USB driver Version 2.0.0.2 or later** is required to use multi-PBX connection.
- 3) When you use two PBXs by USB connection, you need to assign a unique USB serial number to each PBX by TDA Maintenance Console.
(e.g., When USB Serial Number is “1”, USB connection name will be “KX-TDA100/200_1”.
When USB Serial Number is “2”, USB connection name will be “KX-TDA100/200_2”.)

For KX-TDA series PBX, USB serial number setting menu on the Maintenance Console is on “2.System - 9.System Option - Option6 - CTI Multi PBX Control”(see following picture)



3.2. Log Settings

“**TSP Log Settings**” configures how Panasonic TSP will output the logged data.



a. Log Type

Panasonic TSP has 3 log types:

- Raw: Contains only binary CSTA messages exchanged with PBX.
- Decoded CSTA values: Contains binary CSTA messages and their human readable form.
- Debug: Contains decoded CSTA messages as well as TSPI function calls and TSPI messages sent to TAPI. This is the most effective information for debugging purposes.

b. Log File Path

The “Logs<xxxx>” folder is created in the path which the user specified and the log files are stored in the Logs<xxxx> folder. The default path is <Program Files>\Panasonic\KX-TDA TSP.

The format of the log file name is “KXTDAxxxx_yyyymmddhhMMss.txt” (xxxx: contents of the log, yyyy: year, mm: month, dd: day, hh: hour, MM: minute, ss: second):

E.g.,) KXTDACOM_20151112102045.txt

The log files for the last 7 days are remained under the log files path.

NOTICE:

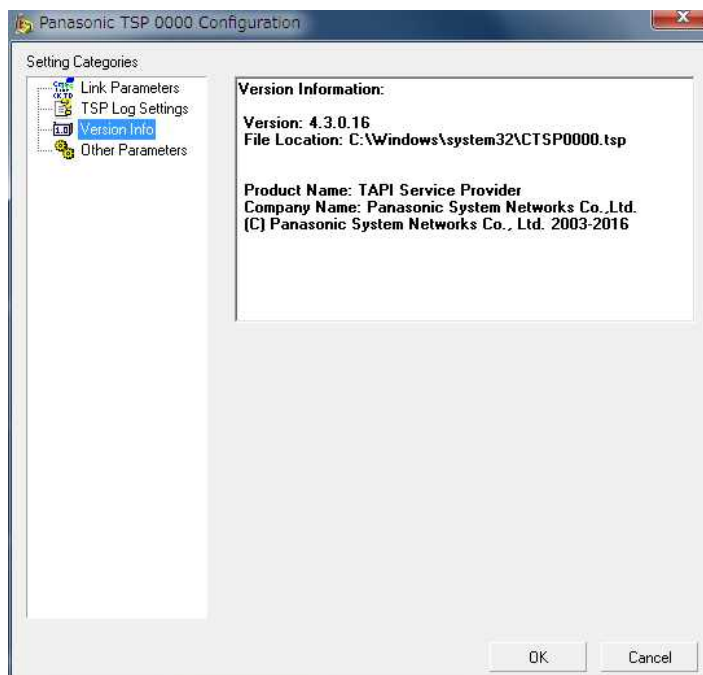
The log file path setting is not taken over by overwrite installation. Please set the desired path on this dialogue after the installation.

c. Include time stamp in log

Enables the log file to have a time stamp for each operation logged.

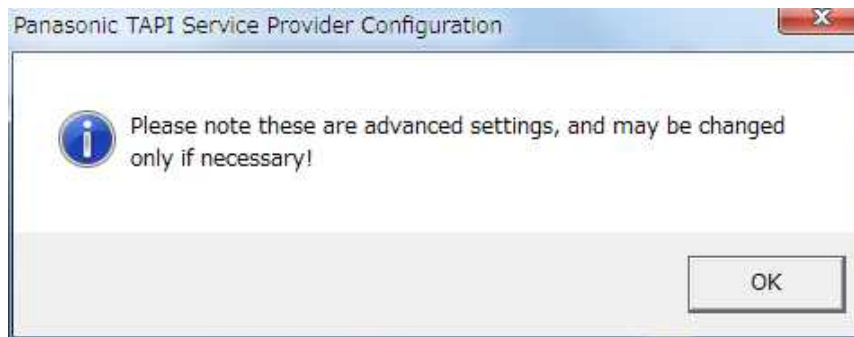
3.3. Version Info

“**Version Info**” is **read only** and contains version information about the Panasonic TSP you are using.

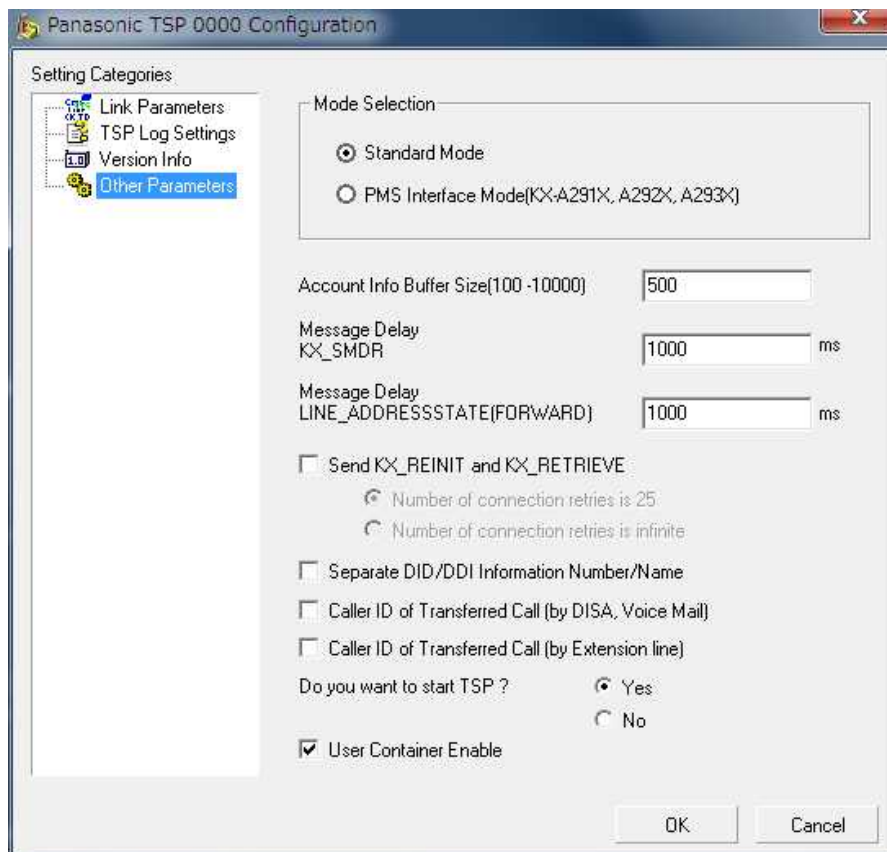


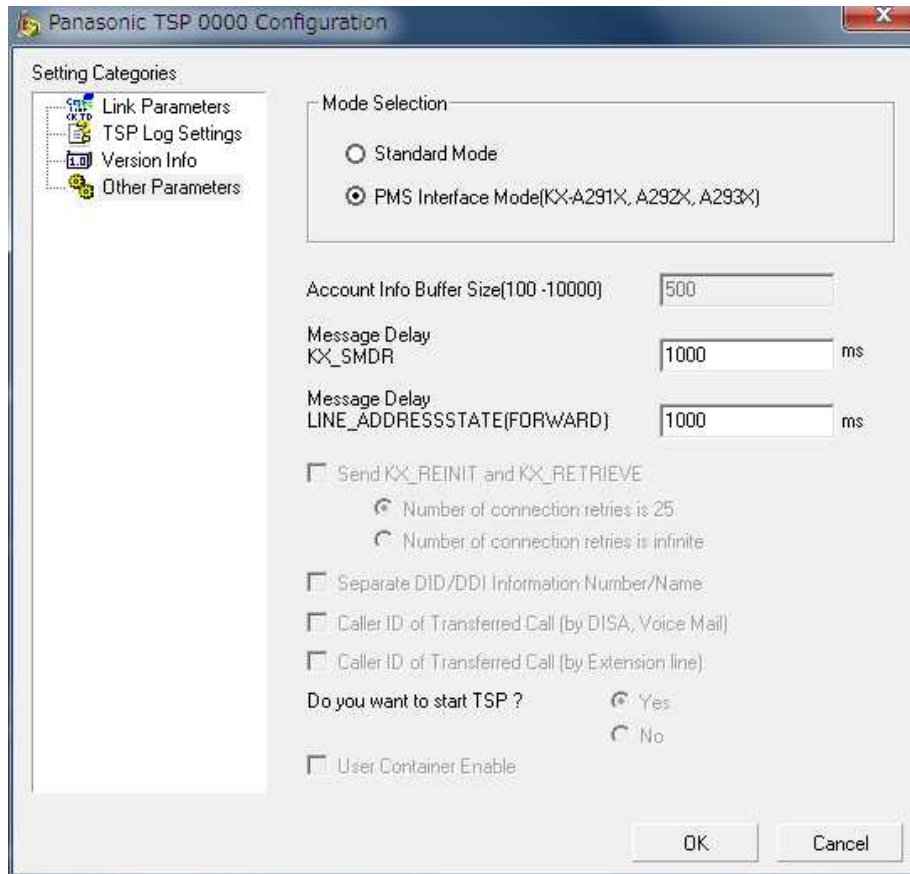
3.4. Other Parameters

When the “**Other Parameters**” option is selected, the following message will appear to inform the user that these settings are advanced and must be changed according to TAPI Application requirements.



“**Other Parameters**” configures optional parameters





Configurable parameters are as follows:

a. Mode Selection

- Standard Mode - Recommended option for TSP to work in normal mode.
- PMS Interface Mode - Option selected only for certain application.

Note:

- Multiple TSP instances are not available for “PMS Interface MODE”.
- When “PMS Interface Mode” is selected, some of options are grayed out as shown on the dialogue above.

b. Account Info Buffer Size

Sets the number of account information records that the Panasonic TSP can store on the HDD. If enough HDD space for all account info records is reserved, the Panasonic TSP will not start.

c. Message Delay (KX_SMDR)

Panasonic TSP can be configured to queue LINE_DEVSPECIFIC (KX_SMDR) events sent to TAPI in order to let the application have enough time to process each event. Each line device that supports this kind of message has its own queue. It is recommended to use the default value that is 1000 ms.

d. Message Delay LINE_ADDRESSSTATE (LINEADDRESSSTATE_FORWARD)

Panasonic TSP can be configured to queue LINE_ADDRESSSTATE (LINEADDRESSSTATE_FORWARD) events sent to TAPI in order to let the application have enough time to process each event. Each line device that supports this kind of message has its own queue. It is recommended to use the default value that is 1000 ms.

e. Send KX_REINIT and KX_RETRIEVE

Enables Panasonic TSP to send LINEDEVSPECIFIC (KX_REINIT) and begin recovery procedure when Panasonic TSP lost the connection to PBX

However, Panasonic TSP may fail recovery in some case e.g., when PBX Setting changed between KX_REINIT and KX_RETRIEVE.

TSP does not send all events while TSP sends KX_REINIT event and KX_RETRIVE event. In the case Panasonic TSP sends LINE_DEVSTATE (REINIT) and enters in an unknown condition unless all applications initialize the use of TAPI.

>> Number of Connection Retries

Number of Connection Retries is 25: When Panasonic TSP lost the connection to PBX, TSP tries to re-connect 25 times (same as previous version).

Number of Connection Retries is infinite: When Panasonic TSP lost the connection to PBX, TSP tries to re-connect infinitely.

f. DID/DDI Information Number/Name

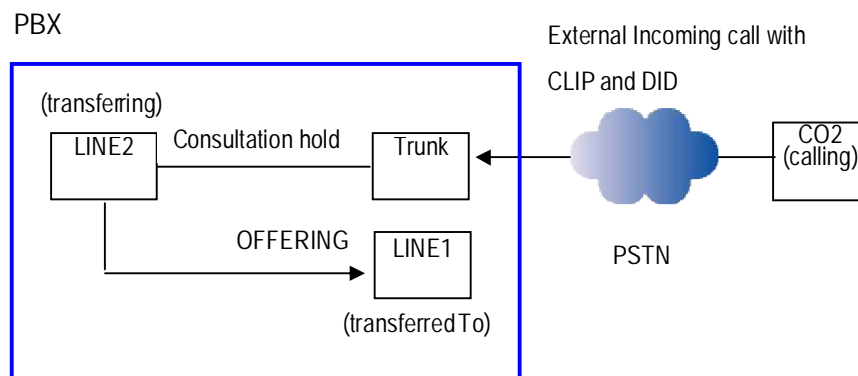
Enables Panasonic TSP to fill the CALLINFO.DEVSPECIFIC structure with DID/DDI numbers and names in separate format (the number is set in the dwDIDDDISize/DIDDDIOffset area and the name is set in the dwDIDDDINameSize/dwDIDDDINameOffset area).

Also CLIP information including CLIP Name in transferred calls set in separate format (the number of CLIP information is set in the dwTranCLIPSize/ dwTranCLIPOffset area and name of CLIP information is set in the dwTranCLIPNameSize/dwTranCLIPNameOffset area).

g. Caller ID of Transferred Call (by DISA, Voice Mail)

By checking this option, the parameter value of LINECALLINFO.CallerID and CallerIDName for the transferred-to line (LINE1) becomes original callerID(CLIP) only when transferring line (LINE2) is DISA or voicemail at both screened and unscreened transfer.

When transferring line is other than DISA or voice unit, CallerID and CallerIDName parameter value is actual transferring line (LINE2).



h. Caller ID of Transferred Call (by Extension Line)

By checking this option, the parameter value of LINECALLINFO.CallerID and CallerIDName for the transferred-to line (LINE1) becomes original callerID(CLIP) only when transferring line (LINE2) is an extension line at both screened and unscreened transfer.

Note : When a SIP phone is used as the transferring line, this option is not available.

i. Enable connection to TDA PBX “Do you want to start TSP ?

When Panasonic TSP and PBX Maintenance Console use USB for connecting to the PBX, the both cannot be used at the same time.

When Panasonic TSP is installed and computer is restarted, Windows may start Panasonic TSP automatically. Therefore, PBX Maintenance Console may not be started by installation of Panasonic TSP. For this reason, to start TSP or not, you can set the switch ("Yes" or "No") in "Do you want to start TSP?".

(1) In case of "Yes"

After computer is restarted, you can use TAPI Application. However, Panasonic TSP may be started automatically after computer restart and you may not be able to start PBX Maintenance Console.

(2) In case of "No"

After computer is restarted, you can use PBX Maintenance Console. However, you cannot start TAPI Application after computer restart.

Note:

All settings will take effect after the next restart of computer

j. User Container Enable

This parameter is only for KX-NSX series PBXs and used to enable (1) TSP to notify the application of the User Container related events; and (2) the application to be aware of the User's status in accordance with the PBXs status handling, for example, when a public line in a container is busy, the application may find an extension in the same container is also busy even if the extension is actually idle.

For the application which may not be able to handle the User Concept feature, this option shall be disabled (unchecked), but may invite some errors like Call Busy during call control because there would be the case an extension is idle for the application though it is busy under the PBX.

3.5. Settings for Multi-PBX Connection

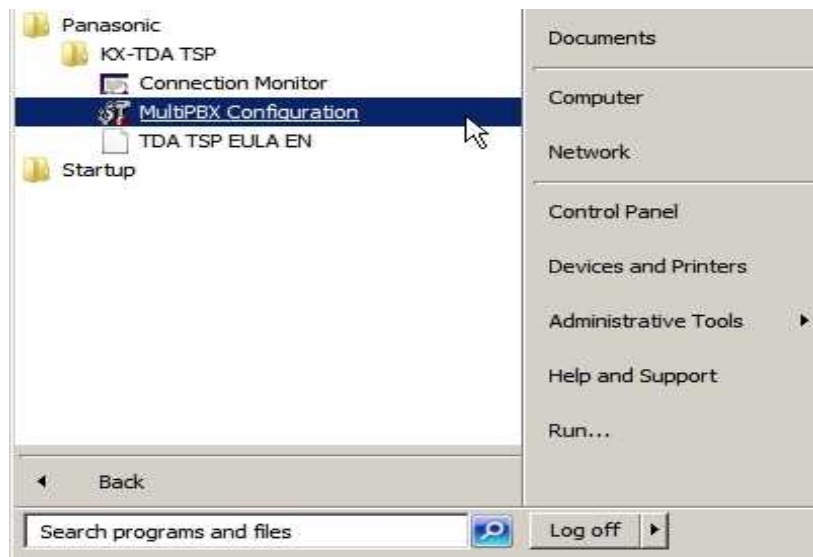
3.5.1. Before setting Multi-PBX Connection

This feature allows you to connect two or more PBXs.

Before setting multi-PBX connection, install TSP by referring to the following instructions.

3.5.2. How to set Multi-PBX Connection

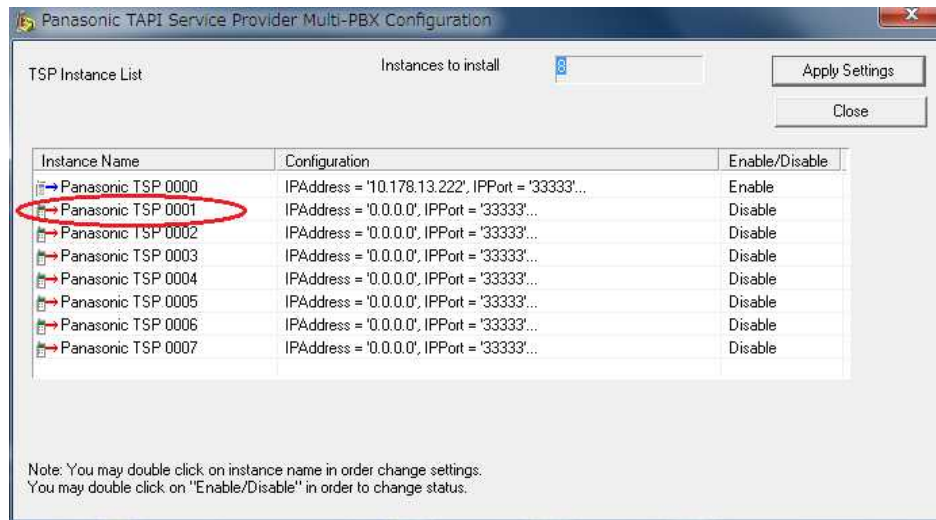
- 1 In order to start Panasonic TSP Multi-PBX Configuration, follow: **“Start->Program->Panasonic->KX-TDA TSP->MultiPBX Configuration”** like in the next image.



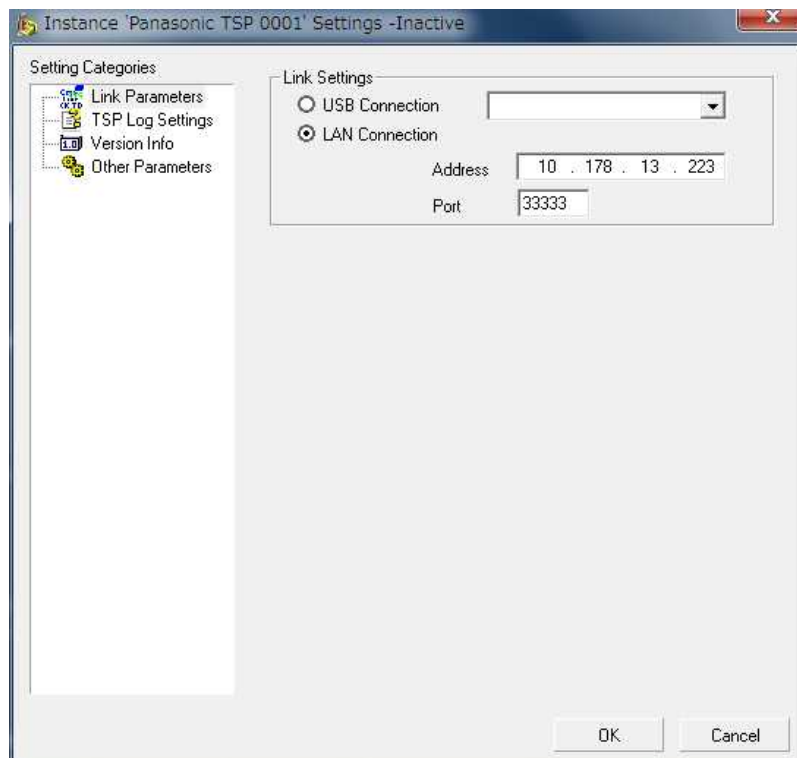
- 2 The following message will appear in order to note that TSP and CSTA Application cannot be used at the same timewithout CSTA Multiplexer. Press **“OK”** to continue.



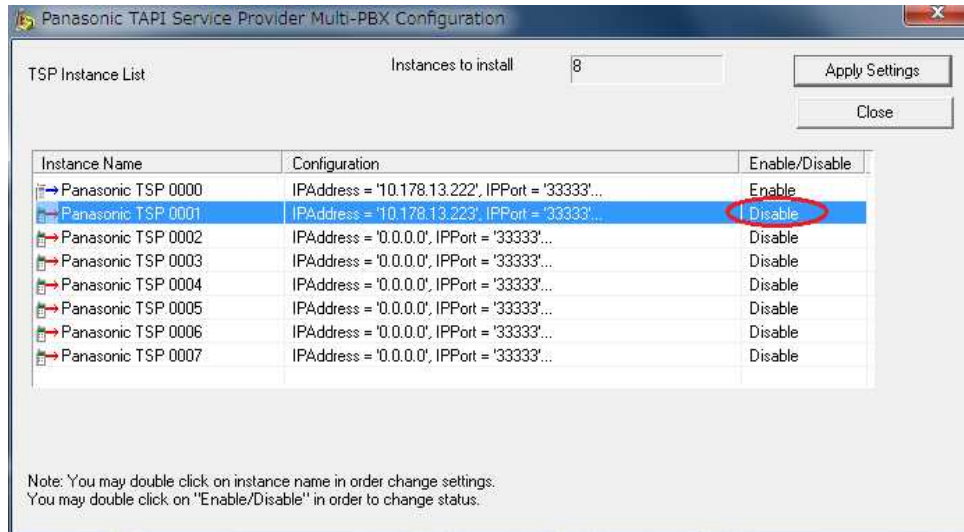
- 3 Select “Panasonic TSP 0001” and double click to configure a new TSP instance for second PBX. Then configuration dialogue for the second PBX will appear.



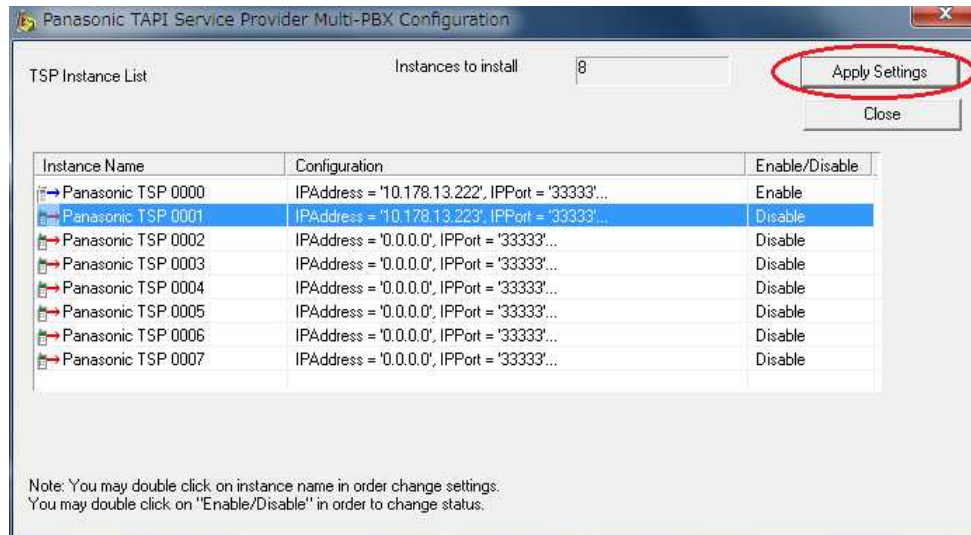
- 4 When “Panasonic TSP 0001” configuration dialogue is opened, configure LinkSettings in Link Parameters menu and press “OK”.



- 5 To enable the new TSP instance, double click "Disable" field of the instance.

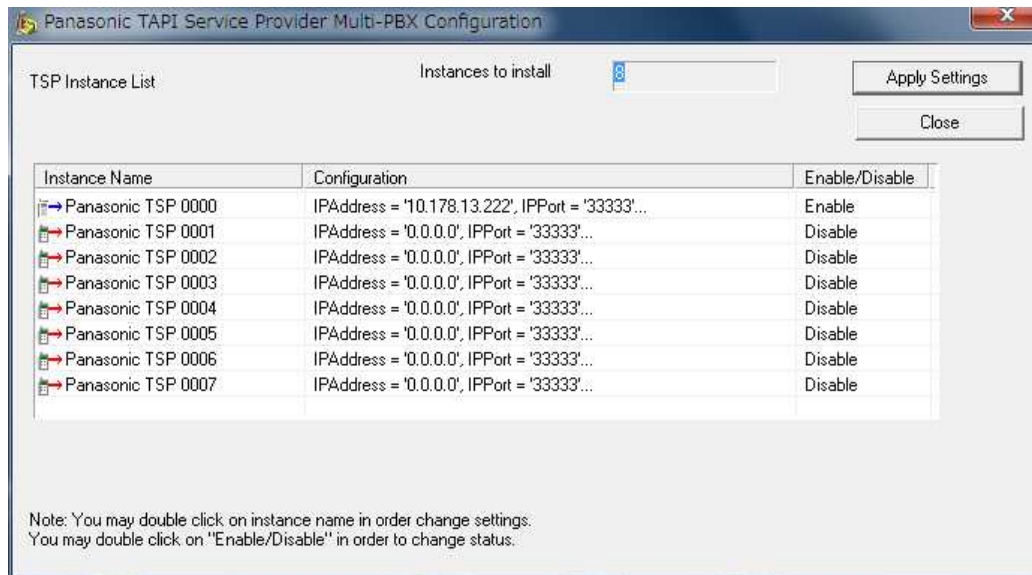


- 6 To save the settings, click "Apply Settings".



- 7 Click "Close" to terminate Multi-PBX Configuration Tool Then please **reboot the PC manually**.

3.5.3. Multi-PBX Configuration Dialogue



TSP Instance List contains following information:

- "Instance Name" - This is TSP Instance Name same as Control Panel Phone and Modems Options - Advanced displays.
- "Configuration" - Informative of configuration string.
- "Enable/Disable"
 - "Enable": TSP instance is registered with TAPI
 - "Disable": TSP instance is unregistered with TAPI.

At startup this field contains current registration status of TSP Instance. "Enable": TSP instance is registered with TAPI. "Disable": TSP instance is not registered with TAPI.

Multi-PBX Configuration Tool allows to:

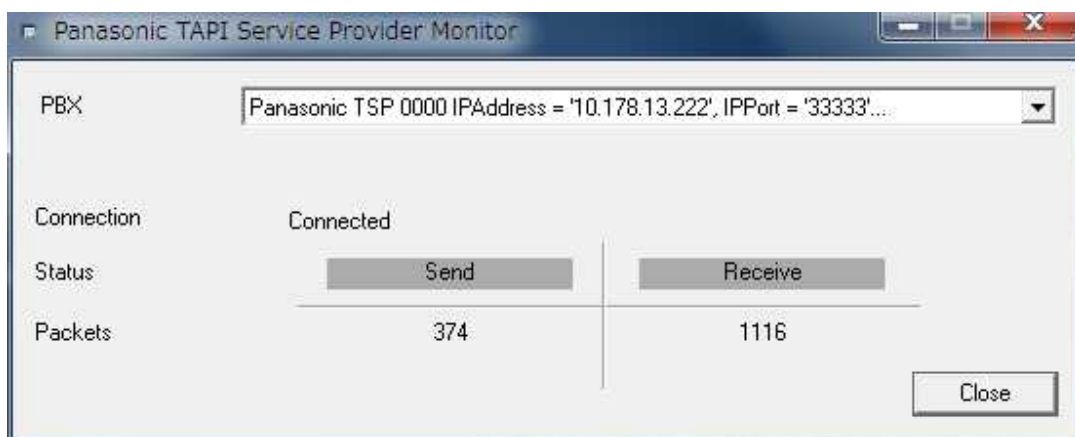
- Specify parameters of each instance
- Register/Unregister each TSP instance with TAPI (Telephony System).

Annex A

TSP Connection Monitor Tool

This tool shows PBX connection status of each TSP instance.

You may use provided shortcut under **Start Menu-> Programs-> Panasonic-> KX-TDA TSP -> Connection Monitor.**



Use "PBX" combo box to select TSP instance which you want to see the status.

Connection may be:

Now Connecting – TSP instance is initializing connection with PBX.

Connected - TSP instance has been connected with PBX. It is possible to control/monitor with TAPI application(s).

Disconnected – TSP instance is not communicating with PBX.

Not Registered with TAPI – TSP instance is not registered in TAPI (Telephony System).

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