

Panasonic

Getting Started

PMS Interface Software

Model No. **KX-A291/KX-A292/KX-A293**



Please read this manual carefully before using this software.
Thank you for purchasing this Panasonic product.

Accessories

When unpacking, check the following items.

CD-ROM.....	one
Dongle.....	one
Getting Started Manual.....	one

This Operating Instructions does not show complete model numbers that indicate the country where your models should be used. The model number of your product is found on the CD-ROM.

KX-A291/292/293---



In this manual, the suffix of each model number is omitted.

Note:

To see the manuals in CD, it is necessary to use Adobe® Acrobat® Reader® (4.0 or later) or Adobe Reader (6.0 or later). If neither of these applications is installed on your PC, download the latest version from Adobe Web Site.

Copyright:

This material is copyrighted by Panasonic Communications Co., Ltd., and may be reproduced for internal use only. All other reproduction, in whole or in part, is prohibited without the written consent of Panasonic Communications Co., Ltd.

Trademarks:

- Microsoft, Windows, Windows Server, and Windows Vista are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.
- Adobe, Acrobat Reader, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
- Intel and Pentium are trademarks of Intel Corporation in the U.S. and other countries.
- All other trademarks identified herein are the property of their respective owners.
- Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.

Note:

- Do not use the functions with “Available in the future” written in this manual.
- The contents and design of the software are subject to change without notice.

Contents

ACCESSORIES.....	2
1. OVERVIEW.....	5
1.1 ABOUT PMS INTERFACE	5
1.2 SUPPORTED DEVICE CONNECTION TYPES	5
1.3 PMS INTERFACE COMMUNICATION PARAMETERS	6
1.4 PMS INTERFACE TERMS.....	6
2. BEFORE INSTALLATION	9
2.1 PC HARDWARE REQUIREMENTS	9
2.2 PANASONIC KX-TDA/KX-TDE SERIES.....	10
2.3 HARDWARE CONFIGURATION	10
2.4 POSSIBLE SYSTEM CONFIGURATION (RS232)	11
2.5 POSSIBLE SYSTEM CONFIGURATION (TCP/IP)	12
3. VISTA CONSIDERATIONS	13
3.1 INSTALLING PANASONIC PMS INTERFACE SOFTWARE ON VISTA	13
3.2 ENABLING UAC.....	13
3.3 INSTALLING PMSI AS AN ADMINISTRATOR	14
3.4 RUNNING PMSI AS AN ADMINISTRATOR.....	14
3.5 VISTA FIREWALL.....	16
4. START INSTALLATION.....	18
4.1 INSTALLING PANASONIC PMS INTERFACE SOFTWARE.....	18
4.2 UNINSTALLING PMS INTERFACE	23
5. STARTING PMS INTERFACE	24
5.1 STARTING A NEW PMS INTERFACE CONFIGURATION FILE.....	25
5.2 OPENING AN EXISTING PMS INTERFACE CONFIGURATION FILE.....	26
5.3 SAVE PMS INTERFACE CONFIGURATION AS ANOTHER FILE	26

6.	CONFIGURING PMS INTERFACE	27
6.1	DEVICE SETUP	27
6.1.1.	Save Device definition in another file.....	28
6.1.2.	Editing a Device	28
6.2	RECOMMENDED SETTING PROCEDURES FOR MESSAGE AND COMMAND	29
6.3	HANDLING INCOMING MESSAGES	30
6.3.1.	Add a New Message.....	30
6.3.2.	Edit a Message	31
6.4	HANDLING OUTGOING COMMAND SEQUENCES	39
6.4.1.	Edit a Command-Sequence	40
6.4.2.	PMS Interface Commands.....	44
6.4.3.	Defining Macros (optional).....	49
6.4.4.	Defining Masks.....	50
6.4.5.	Defining Remap (Translation) Tables.....	51
6.5	SETTING UP THE DEVICE CONNECTION	56
6.5.1.	Connecting KME type.....	56
6.5.2.	Connecting a Comm (RS232)-Type Device.....	62
6.5.3.	Connecting a TCP/IP-Type Device	71

Getting Start

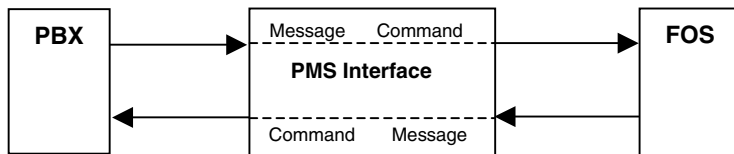
This “**Getting Start**” document intent to help the installer to set up the Panasonic PMS Interface software and give them some basic knowledge before read through the whole manual, however all the contents in this document can also be found in Operating Instructions. It is recommended that installer should refer to Operating Instructions for a more in-depth understanding of this Panasonic PMS Interface.

1. Overview

1.1 About PMS Interface

PMS Interface interconnects multiple devices by translating, or mapping a **message** received from a source device into a corresponding **command sequence** sent to the destination device.

PMS Interface enables the user to monitor the devices' status and messages online.



1.2 Supported Device Connection Types

PMS Interface supports any device, which may be connected to a PC by one of the following connection types (PMS Interface can support maximum 10 devices):

- KME: Panasonic PBX interface
- COMM: RS-232C
- TEXT: Text file (For TABS Call Accounting for Windows for example)
- PRNT: Printer
- DISP: Screen/Keyboard of PC
- IP: TCP/IP or UDP/IP (either client or server)

1.3 PMS Interface communication Parameters

Independent of a devices connection type, PMSi provides the following basic functionality for all connection types:

- Record selection / filtering
- Message field parsing
- Command formatting
- Data logging of messages and commands
- Link Suspend and Re-activate
- Inactivity Alarms

Depending on the device connection type, the communications parameters will vary. The following table summarizes the parameters for each connection type. For more details, see the setup description for each of the connection types:

Device Type	Parameters	Used By
KME		<ul style="list-style-type: none">• Panasonic KX-TDA/KX-TDE Series PBX
COMM	<ul style="list-style-type: none">• Com port (1-16)• Baud rate (300 bps-38,400 bps)• ACK/NAK/ENQ/BCC	<ul style="list-style-type: none">• Fidelio
Text	<ul style="list-style-type: none">• File name	<ul style="list-style-type: none">• TABS Call Accounting
Printer	<ul style="list-style-type: none">• Destination printer name (local or network)	<ul style="list-style-type: none">• Hotel logging printers
Disp		<ul style="list-style-type: none">• Testing• Diagnostics
Ip	<ul style="list-style-type: none">• Client / Server• IP Address (Client only)• Port Number	<ul style="list-style-type: none">• Fidelio

1.4 PMS Interface Terms

ACK: A character sent by a device to indicate that a message was received properly.

BCC: A character added to the end of a message to enable the receiver to verify that the message was received in its entirety.

Action: An operation issued automatically by PMS Interface as a reaction to an alarm (or a series of alarms), in order to re-establish communication with an inactive device or to notify communication failure.

Alarm: An indication that the system has been inactive for the last X minutes (the value of X is set separately for every hour of the day, according to the expected activity level).

ASCII code: The **American Standard Code for Information Interchange** represent the character (include character, number, signal and unprintable character) in number from 0 to 255. For example, a capital 'A' can be represented by an ASCII code 65. All numbers mentioned are decimal numbers.

Command: PMS Interface's output (the device's input) data. Each device has a set of commands it can execute. PMS Interface translates messages addressed to the device to set of commands.

Data-scope: A diagnostics tool, which enables the user/installer to view raw data exchange.

Device: A hardware or software entity, which communicates by sending messages and responding to commands.

FOS: Front Office System is the software package which the hotel front desk uses for guest check-in, check-out and reservation, ...etc.

Log File: A file named PMSI.LOG (the default name), which contains a log of PMS Interface's activity for all devices.

Message: PMS Interface's input (the device's output) data.

PMD file: A device's definitions file (*.PMD) which contained all the connection information, commands, messages, alarms setting, macros and default date setting of the device.

PMI file: A PMS Interface configuration file that includes the remap table(s), email setting and the devices (the PMD files) connected to the PMS Interface.

PMS Interface or PMS I/F: Property Management System Interface.

Priorities: The percentage of CPU resources allocated to each device and to the PMS Interface application. PMS Interface automatically issues a higher priority to busier devices.

Remap Table: A table that converts one type of data into another.

State: The current state of a device. Also indicates what operation PMS I/F is performing for the device.

2. Before Installation

2.1 PC Hardware requirements

- Microsoft® Windows® 2000 (English), Windows Server® 2003 (English), and Windows XP (English)

Recommended Requirements (for installing PMS Interface software only)

	128 Rooms	256 Rooms	960 Rooms
CPU	Pentium 4 1.4 GHz	Pentium 4 1.4 GHz	Pentium 4 1.4 GHz
RAM	512 MB	512 MB	512 MB
HDD	20 GB	40 GB	60 GB

- Microsoft Windows Vista® (English)

Recommended Requirements (for installing PMS Interface software only)

	128 Rooms	256 Rooms	960 Rooms
CPU	Intel® 2.66 GHz (32 bit) processor	Intel 2.66 GHz (32 bit) processor	Intel 2.66 GHz (32 bit) processor
RAM	1 GB	1 GB	1 GB
HDD	40 GB	40 GB	60 GB

CD-ROM drive should be included for installation purpose.

PMS Interface software need standard COMPORT for connection, the number of COMPORT (max. 16) needed depends on the devices intended to connect via PMS Interface.

If antivirus software is installed on your PC, system resources exceeding the recommended requirements will be necessary.

2.2 Panasonic KX-TDA/KX-TDE Series

- Before use, make sure that the TSP program of KX-TDA Series you have is version 3.1.0.7 or later.
- The following PBXs support the PMSi.
 - KX-TDA100
 - KX-TDA200
 - KX-TDA600
 - KX-TDE100
 - KX-TDE200
- The software file version of the PBX must be as follows:
 - KX-TDA100/KX-TDA200: PMPR Software File Version 3.0000 or later
 - KX-TDA600: PLMPR Software File Version 5.0000 or later
 - KX-TDE100/KX-TDE200: PMMPR Software File Version 2.0000 or later
- You can connect your personal computer to the PBX with a LAN connection (KX-TDA/KX-TDE Series) or a USB connection (KX-TDA Series only).
- To use a LAN connection, KX-TDA series PBXs must be configured by using CTI-LINK card.

2.3 Hardware Configuration

Connections

- (a) Connect the Panasonic KX-TDA/KX-TDE Series to USB/LAN port with prepared USB/LAN cable.
- (b) Connect the power to the Panasonic KX-TDA/KX-TDE Series and turn it on. (Try to make an internal call to confirm the PBX is working.)

The Dongle

- (a) Insert the dongle into the USB port of the PC. The PMS Interface software will not function without it.
- (b) Turn on your PC.

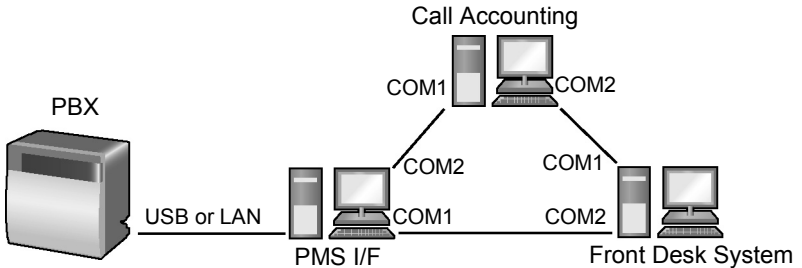
Note: Do not unplug the dongle from the PC while operating PMS Interface Software.

2.4 Possible System Configuration (RS232)

- Configuration I – PMS I/F, Call Accounting and Front Desk System use different PC.

It is ideal to use different PC for different programs (PMS Interface, Call Accounting and FOS) to maximize each program's performance.

In case of 3 PCs configuration, the PMS Interface PC needs at least 2 COM PORTs. One for connecting Call Accounting software, and one for connecting FOS.

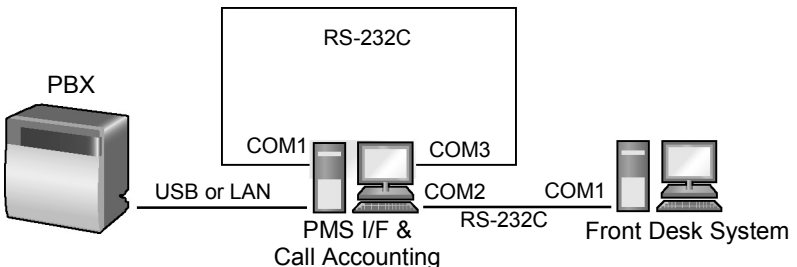


Note: Depending on FOS, Front Desk System may need one or more PC.

- Configuration II – PMS I/F and Call Accounting use same PC and Front Desk System use another PC.

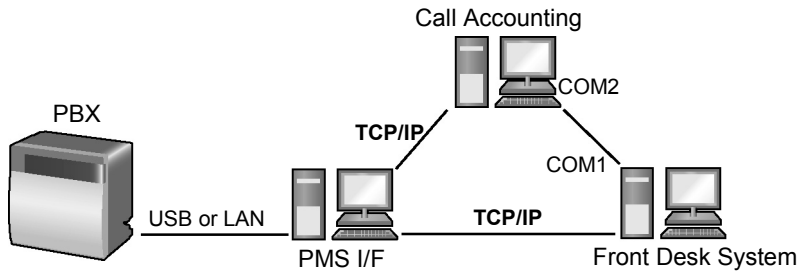
Whether PMS I/F and Call Accounting software can work on one PC depends on the capability of the Call Accounting software. If any problem, it should not work on one PC.

Depending on the capability of the Call Accounting software, the PMS I/F PC may need one more extra COM PORT (i.e. total 3) for the Call Accounting software. For TABS Call Accounting for Windows, it doesn't need extra COM PORT. In case the FOS contain the call accounting capability, or the FOS is combined with the Call Accounting software in one PC, then the PMS Interface PC need only 2 COM PORTs depend on different combination.

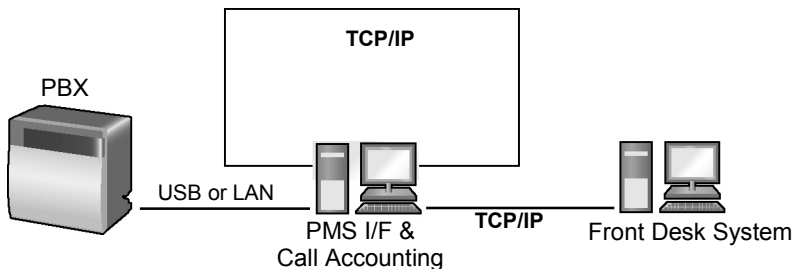


2.5 Possible System Configuration (TCP/IP)

- With the advent of TCP/IP many vendors are switching over from RS232 to TCP/IP. PMSi can be configured to connect via TCP/IP instead of RS232
- Similar to the RS232 Configuration, the following diagram depicts the configuration with TCP/IP connections instead of the RS232.



- Configuration II – PMS I/F and Call Accounting use same PC and Front Desk System use another PC.



3. Vista Considerations

3.1 Installing Panasonic PMS Interface Software on Vista

With the advent of the Windows Vista operating system the UAC security functionality that was introduced. This new security system prevents unauthorized users from modifying programs and data. The UAC may prevent PMSi from being installed. Once installed the UAC may hinder normal operations that write to data files (logs, configuration files, etc.)

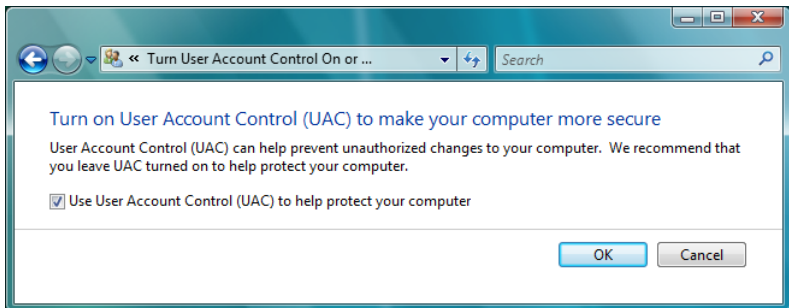
To avoid these problems the following options are available:

- Installing PMSi as an Administrator
- Running PMSi as an Administrator

3.2 Enabling UAC

This may be accomplished as follows:

Control Panel → User Account → Turn User Account Control on or off



Check the checkbox to enable UAC, then click OK.

Changing this setting may require a re-start of Vista.

3.3 Installing PMSi as an Administrator

To install PMSi as an administrator, simply logon to Vista as an administrator and proceed to the Start Installation section

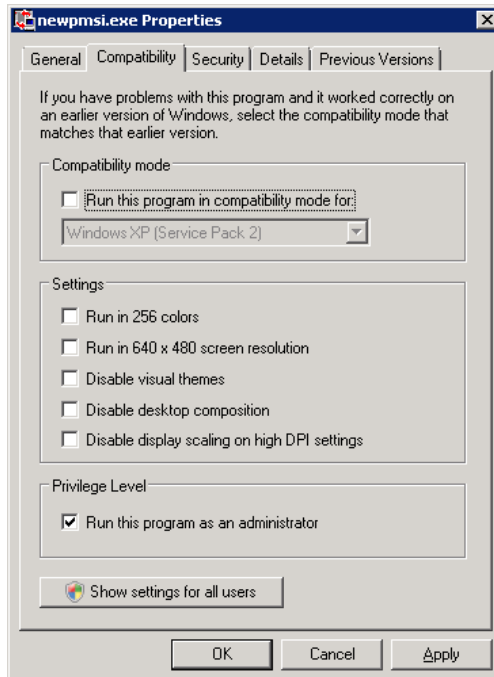
3.4 Running PMSi as an Administrator

To run PMSi as an administrator, follow the procedure below:

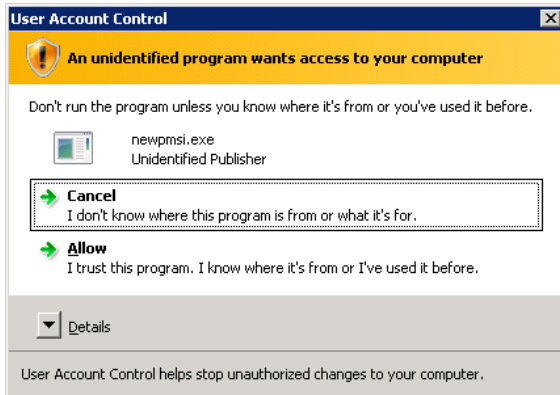
1. Logon to Vista as user with administrator rights.
2. Open Compatibility properties screen of NewPMSi.exe.
3. Click the “Run this program as an administrator” check box.

This may be accomplished by right clicking on NewPMSi.exe and checking the Run program as Administrator.

By default, the directory path of NewPMSi.exe is C:\Program Files\PMSi.

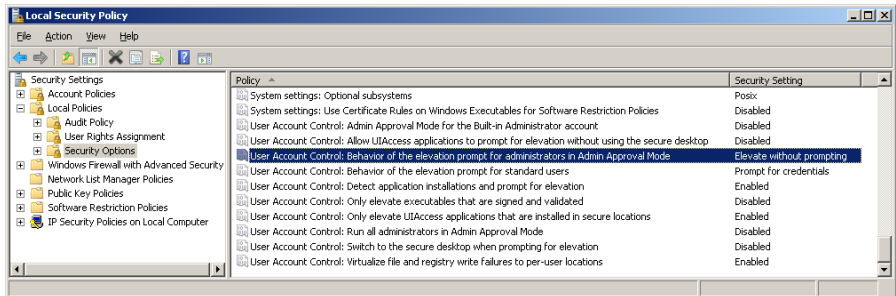


If when starting PMSi you get the following prompt:

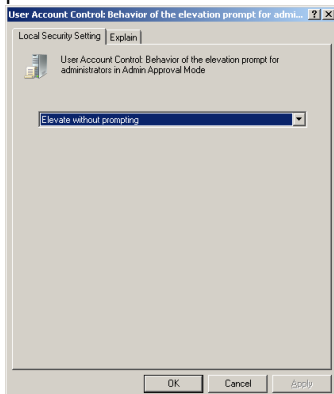


Then you may perform the following in order to prevent this prompt from appearing:

Control Panel → Administrative Tools → Local Security Policy → Local Policies → Security Options



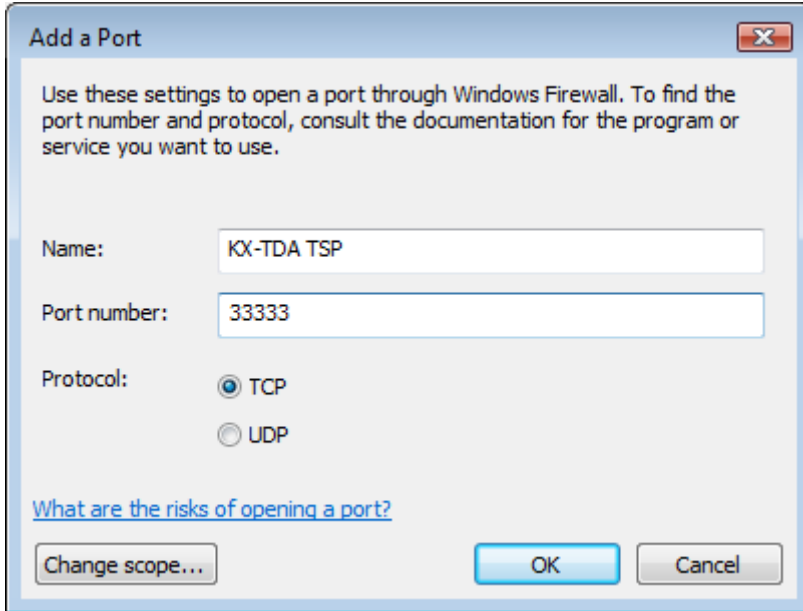
Double click on: *User Account Control: Behavior of elevation prompt for administrators in Admin Approval Mode*. Select *Elevate without prompting* and press OK



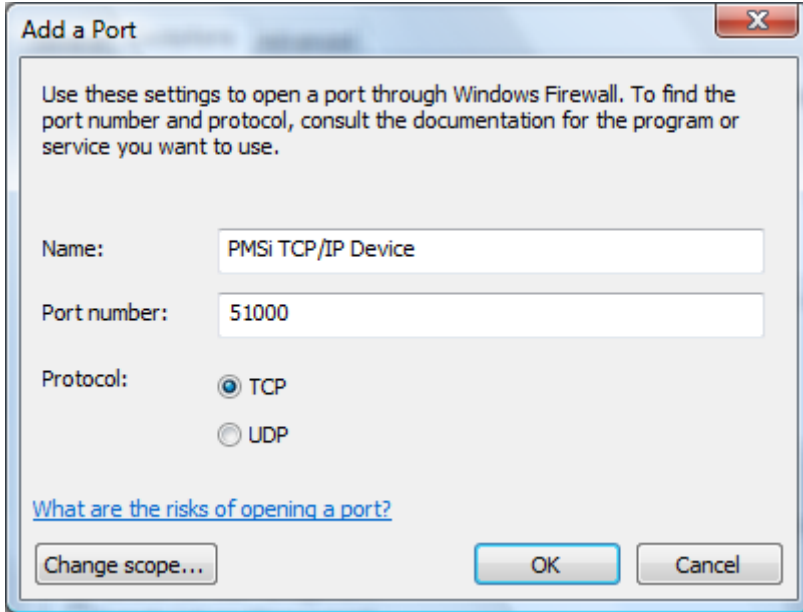
3.5 Vista Firewall

Completely disabling the Firewall in Vista is not an option. Vista seems to detect that it is unprotected, and, at an even lower level blocks incoming TCP connection attempts.

To enable TSP communications (when using TCP/IP connection) add the following firewall exception:



For each PMS TCP/IP device that is configured as a server, add the selected port to the Firewall exceptions:



In this example, the selected port that PMSi is waiting/listening for a connection, is 51000.

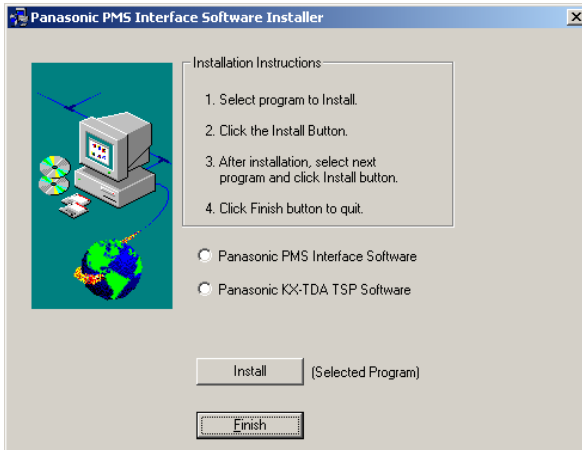
4. Start Installation

4.1 Installing Panasonic PMS Interface Software

On most Windows 2000 (English), Windows Server 2003 (English), Windows XP (English), or Windows Vista (English), setup will automatically start when the PMS Interface CD is loaded. If AutoPlay is not enabled on your system, follow the instructions below:

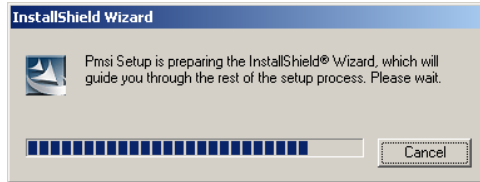
Note:

- **If the old version of PMS Interface Software is already installed on your personal computer, make sure to un-install it after saving the setting files as a reference and then install the new PMS Interface software. After the installation, apply the changes to the new setting file manually.**
 - When installing the new PMS Interface Software, you must belong to administrator group, that is, you must be authorized as an administrator.
- (a) Insert the Panasonic PMS Interface Software CD into the CD-ROM drive.
 - (b) Double-Click “index.html” in the root directory.
 - (c) Go to **Software** on the menu titles and choose **Software Installer**.
 - (d) Click **OK** on the alert window.
 - (e) Then Click “install.exe” and follow the instructions on the screen.

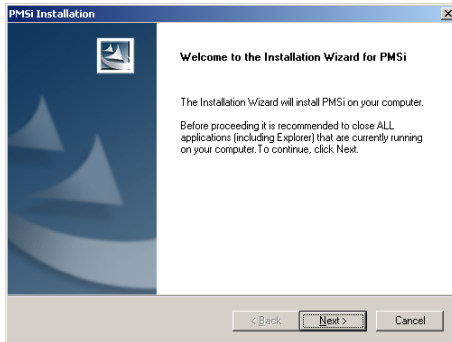


- (f) Check on “Panasonic PMS Interface Software” and then click on the **Install** button. Follow the instructions below to complete the installation.

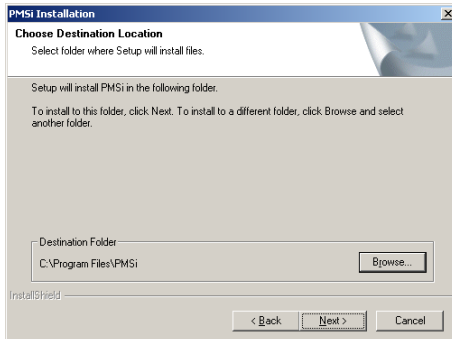
1. The Install Shield will initialize.



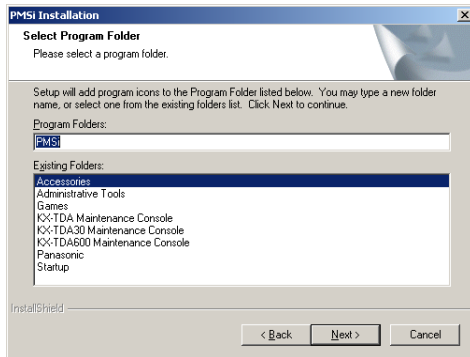
2. In the [Welcome] window, click **Next** to continue the installation. Or click **Cancel** to terminate the installation.



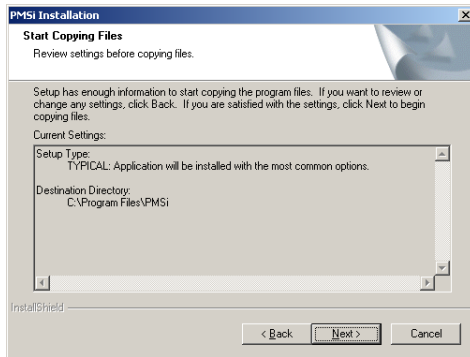
3. Click **Next** to start the installation with the default directory path or **browse** the desired directory.



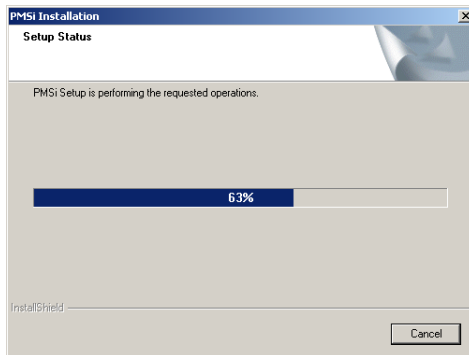
4. Click **Next to** continue the installation with the default program folder name.



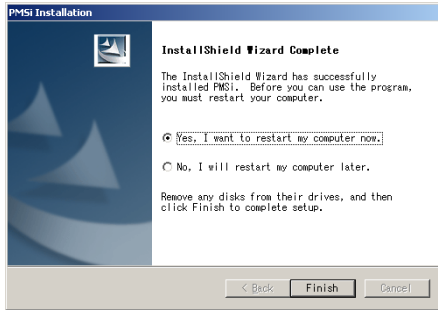
5. Click **Next to** continue the installation with the settings.



6. Wait until the files install completely.



7. After correctly registered in your Windows system, the installation completes. After restart the PC, follow 4.1 (a)-(d) and install the “Panasonic KX-TDA TSP” if necessary.



Note:

- Another dialog may show if the PMS Interface software had been previously installed and there is no need of restart.
- If the previous PMS I/F installation was cancelled in the middle and restarted afterwards, another dialog may show in this step and no need to restart. But when running the PMS I/F software, PMS I/F may request to install a missing driver itself and will continue normally after Windows restarts.

- (g) If the Panasonic KX-TDA TSP was not installed on your computer, click on “Panasonic KX-TDA TSP Software” and then click the ***Install*** button. In order to install Panasonic KX-TDA TSP, please refer to “KX-TDA TSP Installation Manual”.



4.2 Uninstalling PMS Interface

To uninstall PMS Interface, follow the procedure below:

▪ Uninstall PMS Interface software

1. Close the PMS Interface application.

Note: If you want to keep the PMS Interface configuration files for future use, save the PMS Interface configuration files (under PMSi directory with the suffix PMI and PMD), any text or database files that may be required in future to a different directory and proceed to the steps below.

2. Choose *Settings/Control Panel* from the Start menu.
3. In the *Control Panel*, open *Add/Remove programs*.
4. From the program list, select *PMSi* and click the *Add/Remove...* button.
5. PMS Interface and its components will be removed.
6. To finish the PMS Interface un-install, delete the PMSi directory.

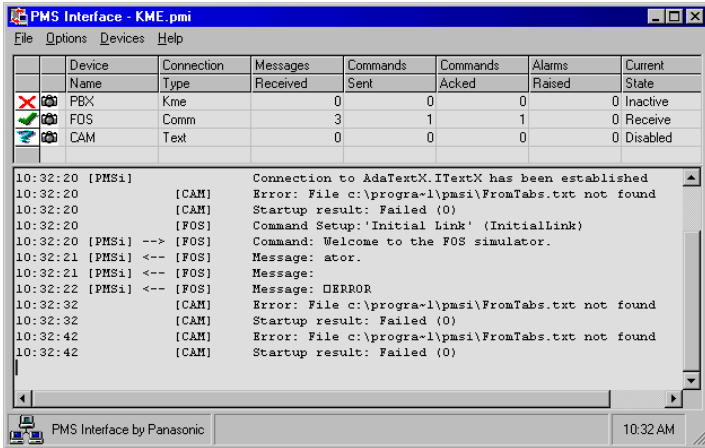
▪ Remove Panasonic KX-TDA TSP

Note: Please make sure no other device/program is using the Panasonic PBX driver before the removal.

1. Choose *Settings/Control Panel* from the Start menu.
2. Open the *Add/Remove programs*.
3. Select **Panasonic KX-TDA TSP**.
4. Click Remove





5. Starting PMS Interface

1. Choose **Programs** from the **Start** menu.
2. Choose **PMSi**. The system's main window opens:



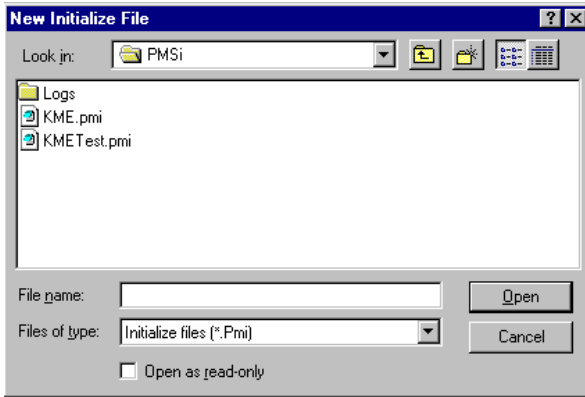
The devices you see on the device list are a part of the system's default configuration. See PMS Interface Specification for TDA (Panasonic Default). Or you may:

3. Edit the current PMS Interface configuration; Or
4. Start a new PMS Interface configuration (See 5.1); Or
5. Open an existing PMS Interface configuration file (See 5.2).

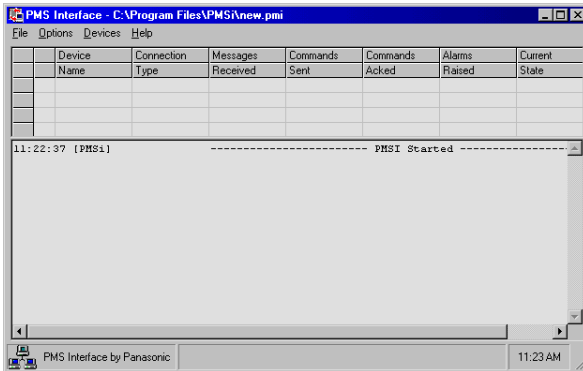
-  indicates that the device functions properly.
-  indicates that the device is disabled due to some problems.
-  indicates that the device has been disabled through software.
-  indicates that a connection attempt is in progress.

5.1 Starting a new PMS Interface Configuration File

1. Select **File/New** from the PMS Interface menu. The following window opens:



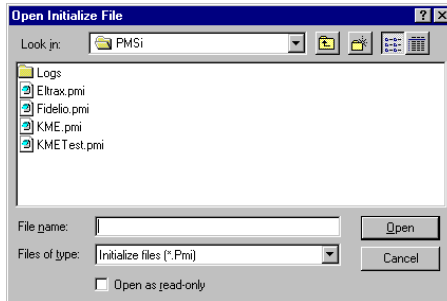
2. Key-in the new configuration-file's name and click **Open**. The PMS Interface software will restart and open with a new configuration file:



3. Configure the PMS Interface, as you like.

5.2 Opening an Existing PMS Interface Configuration File

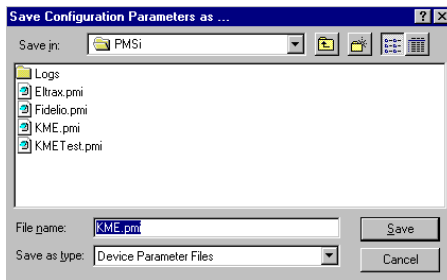
- Select File/Open from the PMS Interface menu. The following window opens:



- Select the desired configuration-file from the list and click **Open**. The PMS Interface software will restart and open with the selected configuration file.

5.3 Save PMS Interface Configuration As another file

- Select **File/Save As** from the PMS Interface menu. The following window opens:



- Enter the filename for the configuration file and click **Save**. The PMS Interface software will save the current configuration into the new file and restart with the new created configuration file.

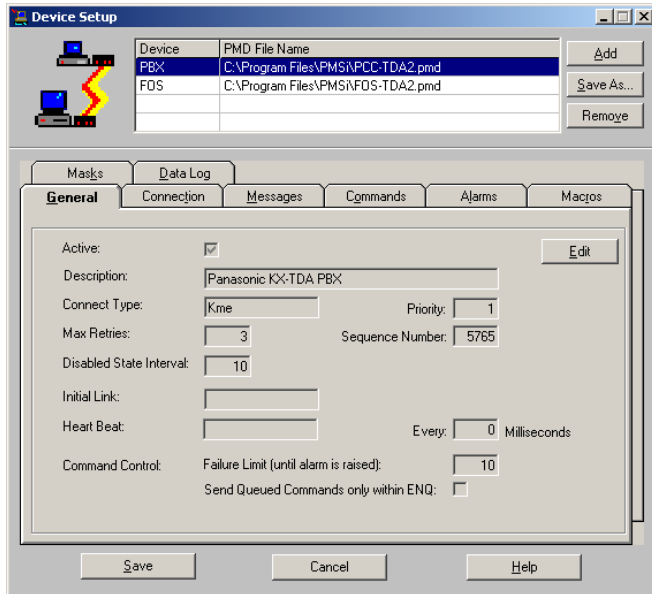
Note: You cannot use the reserved words of Microsoft, such as COM1.pmi, LPT2.pmd, for file names used in PMS interface software.

6. Configuring PMS Interface

6.1 Device Setup

This chapter explains how to add, delete or edit devices to the PMS Interface configuration, by using the *Devices/Setup* option.

Selecting *Setup* from the *Devices* menu opens the following window:



The devices are listed in the upper box. You may add new devices to the list or remove existing devices that are no longer needed.

The attributes of the currently selected (highlighted) device are presented below in eight tabs, as follows:

Connection:

Depending on the device's connection type, this tab presents the corresponding connection parameters and enables you to adjust them as necessary.

Messages:

Enables you to register and characterize the incoming messages received from the device.

Commands:

Enables you to compose command-sequences to be sent to the device.

6.1.1. Save Device definition in another file

To save the device definition in the list to another file (*.PMD).

1. Select the device from the list and click **Save As**.
2. Enter the new PMD filename and click **Save**.
3. The device will start again with the new PMD file.
4. Click **Save** to save the change and PMS Interface will restart and using the new PMD, or click **Cancel** to cancel the changes.

6.1.2. Editing a Device

To edit a device's definitions: (It is recommended to save the current device definition in another file before editing.)

1. Select the device from the device list.
2. Select the tab that contains the definitions you wish to modify (e.g., to add a message, select the **Messages** tab).
3. Edit the data as explained next.

6.2 Recommended Setting Procedures for message and command

PMS Interface interconnects multiple devices by translating a **message** received from a source device into a **command-sequence** sent to the destination device.

The command-sequence that is triggered by the message must be defined for each message.

To define the system the following sequence is suggested:

1. Define all the devices that have to communicate via PMS Interface
2. For each device define a list of the possible command-sequence that send to the device. The message from other device includes some fields from the message that trigger it. If you know the format of the message, fill the **Send** and **Reply** field, if not leave them empty and only fill in the **Description** and **Command Name**.

Tip: Give a short but meaningful Command Name to each command-sequence.

3. For each device, define its messages that it will send to other devices.
4. Return to the **Command** tab and define the **Send** and **Reply** fields for each command.

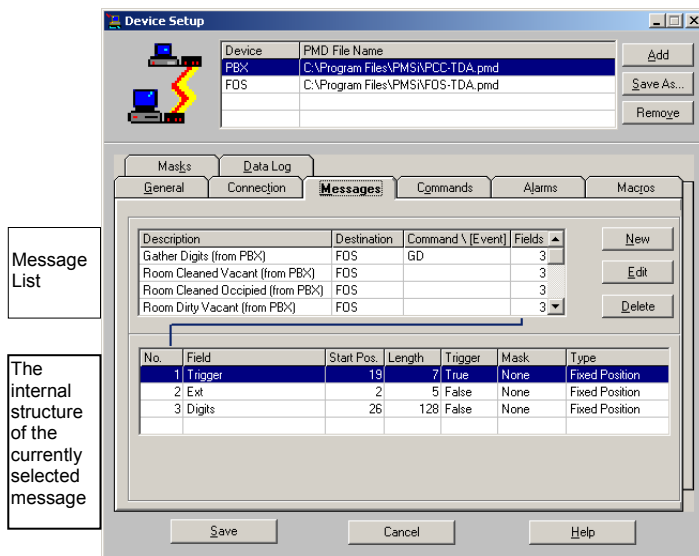
Note:

1. You must have a message to trigger a command. When there is one message that has to trigger several commands to different devices, the message has to be defined several times for each destination device.
2. Usually the messages from one device should trigger the commands in the other device (it needs to select the other device from the list and click its **Command** tab).

6.3 Handling Incoming Messages

The **Messages** tab serves as a translation table, specifying the destination device and the corresponding command-sequence for each message.

The **Messages** tab enables you to add, delete, or edit messages according to the device documentation.



6.3.1. Add a New Message

To add a new message:

1. Click **New**. The **[Message Setup]** window opens (See below).
2. Configure the new message as explained below (Edit a Message).
3. Click **Save** to add the new message to the device's message set.

6.3.2. Edit a Message

To edit a message:

1. Select the message to be edited from the message list and click **Edit**. The **[Message Setup]** window opens:

No.	Field	Start	Length	Trigger	Type	Delimiter	Field No.	Start Pat	End Pat
1	Trigger	19	7	Digits	Fixed				
2	Exit	2	5		Fixed				
3	Digits	26	128		Fixed				

2. Use the **Description** field to edit the message description.
3. The **XML** checkbox indicates that this message will be a valid XML document (Available in the future).
4. From the **Destination** drop-down list, select the device that should receive this message. (Actually, the destination device only receives the fields of the message.) Note that if this message is an **event** (you specified an event name in the **Event** field) then the destination is assumed to be itself. But for clarity, you should select the Device name and set it to the device for which this message is being defined.
5. The **Command Name** drop-down list displays a list of the commands of the **destination device**. Select the appropriate command. (Skip this field in case the message is an event.)

Note: To handle the destination device's commands list, select the device and open its **Command Name** tab.

6. If the message is an event, use the **Event** field to specify its name (usually an abbreviation of the message name).
7. The **High Priority** checkbox is used to instruct PMSi to place this command in the high priority queue (of the destination device). All commands in the high priority queue will be sent to the device before any of the commands in the regular queue.

8. The **Master** checkbox is used to indicate that this message is to invoke a command on any device whose name is similar to the **Destination** device name specified above. This enables a single message to invoke the same command on several devices. A similar device is any device whose name contains the destination device name. For example: If the **Destination** device name is PBX, then in addition to sending the command to the PBX device, the command will be sent to device PBX2 and PBX3 as well as MYPBX4.
9. The **Dynamic Destination** checkbox indicates that the actual destination device to which the selected command should be set to will be taken from a field in the message. The expected field is `_DestDevice_`. If within the message a field named `_DestDevice_` is defined, then the destination will be taken from that field. If the value of the destination field contains a list of devices (Device Names separated by a semicolon. For example, PBX; PBX2), then the specified command will be sent to each of the devices in the list.
10. The message layout is presented at the window's lower part. You can add, delete, or edit data fields as explained below.

6.3.2.1. Add a Data Field

To add a new data field to the end of the message:

1. Click **New**. The **[Field Setup]** window opens. See below.
2. Define the field characteristics as described in "Edit a Data Field" below.

6.3.2.2. Edit a Data Field

To edit one of the message's data fields:

1. Select the field to be edited from the field list and click **Edit**. The **[Field Setup]** window opens

2. Use the **Description** field to edit the field description.
3. Select the field's type from the **Type** drop-down list. A field type may be either:

- ◆ **Fixed Position:** The start position and length of this field are fixed as specified in the 'Start Position' and 'Length' settings found below.
- ◆ **Delimited:** where the field is separated from its neighbouring fields by a certain character called "delimiter". Used when a special character (or even a space) separates fields. Using this method, fields that are not in fixed positions may be isolated.

Example 1:

111;222;333;444444

A " ; " delimiter would be specified. '111' is field no.1 and 333 is field no.3.

Example 2:

;111;222;333;444444

A " ; " delimiter would be specified. '111' is field no.2 and 333 is field no.4.

Example 3:

Case1: **A B**

Case2: **A,,,B**

Although <space> can be used as delimiter but the handling of <space> is little different than the others.

In case1, <space> is the delimiter and there is 4 spaces between A and B, but B is still field number 2, because multiple spaces together will treat as one delimiter. Unlike case2, comma is the delimiter and there is 4 commas between A and B, then B is field number 5.

Also the leading and trailing spaces of the data will be skipped if using the delimiter type.

The **start position** and **length** parameters further specify which portion of the data found within the boundaries are to be used.

The **Delimited Group** is enabled only for fields of the "delimited" type. **Offset** specifies a column (position) from PMS I/F should start to parse delimited fields. Sometimes used when beginning of data is in fixed positions and end of data string is variable. Specify the **Delimiter** character and the **Field No.** within the message.

The delimiter should be one character only. Entering more than one character in the box will result in a OR combination. Example if # \$ were entered in the delimiter box, then PMS I/F will treat both # and \$ be a valid delimiter.

- ◆ **Search:** where the field is located within specified boundaries. The boundaries are defined by a **start pattern** and **end pattern**. The **start position** and **length** parameters further specify which portion of the data found within the boundaries are to be used. If no End pattern is specified then the Length field is used.

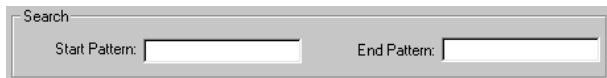
Example:

EXT=111 TRUNK=333 DIALED=5551212

To isolate the trunk number:

- 'Start Pattern' should be set to 'TRUNK='
- 'End Pattern' should be left blank
- Start Position should be set to 1
- Length should be set to 3

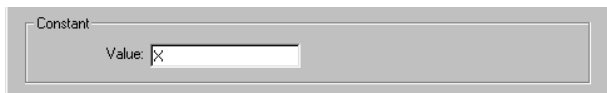
Then the data 333 will be captured.



The **Search Group** is enabled only for the fields of the "Search" type.

Specify the **Start Pattern** and **End Pattern** for the search.

- ◆ **Constant:** Used in cases where a data field is not found in the record, but the invoked command requires a value in some field. The field defined of type **constant** will always be passed to the command with the value specified.



The **Constant Group** is enabled only for the fields of the "Constant" type. Specify the **Value** for the constant.

4. In the **General Group**, the meaning of the **Start Position** field changes according to the field type:

- ◆ For fields of type “Fixed Position”, enter the field’s position in relation to the beginning of the message.

Example: The message

```
Position: 12345678
Message:  ABCDEFGH
```

If set the Start position to 2 and length is 4, then the data captured will be “**BCDE**”

- ◆ For fields of type “Delimited”, enter the field’s position in relation to the delimiter.

Example: The message

```
Field no.: 1 2 3
Position: 12 1234 12
Message:  AB ; CDEF ; GH
```

If the Field no. is set to 2 and Start position to 2 and length is 3, then the data captured will be “**DEF**”

- ◆ For the fields of type “Search”, enter the field’s position after the Start Pattern.

Example: The message

```
Position: 1234567890
Message:  ASSBCDEFXXIJK
```

If the Start Pattern is set to “**SS**” and Start position to 3 and length is 2, then the data captured will be “**DE**”.

Mask: The mask field instructs PMS Interface to validate and standardize the field. This is most useful (and necessary) when processing a date field from a device’s message and validating the numeric data. Possible Masks are as follows:

Type		Mask Description
Date	Delimited	Any month, day year combination with delimiter (12/17/99 or 12/9/2000). Combination included M/D/Y, D/M/Y, Y/M/D, Y/D/M, M/D and D/M, etc.
Date	Non-delimited	Combination included YYMMDD, YYYYMMDD, YYDDMM, MMDDYY, DDMMYYYY, ... etc.
Date	PCDATE	Get the current date from PC.
Time	Delimited	Time format with delimiter (10:34:22 or 23:34:55) H:M:S, H:M.
Time	Non-delimited	Time format without delimiter. HHMMSS, HHMM.
Time	PCTIME	Get the current time from PC.
Date	Device Default	Use the mask specified in the Device's Mask Setup screen
Numeric	Number	Validates the field. If a non-numeric number is detected, a -1 is returned to the command. If the numeric number is needed in the trigger, this mask must be set.
None	Character	Use for all characters and numerics.
Duration	Delimited	Duration format with delimited (10:34:22). H:M:S, H:M.
Duration	Non-delimited	Duration without delimited (103422). HHMMSS, HHMM.
Time AM/PM	Delimited	Time format with delimited (11:22 AM). H:M:S AM/PM, H:M AM/PM.
Time AM/PM	Non-delimited	Time format without delimited (1122 AM). HHMMSS AM/PM, HHMM AM/PM.

Note: All of the Date masks standardize the date into YYYY-MM-DD format. If an invalid date is detected a date of 1899-12-29 is returned. 99:99:99 will be returned if Time format received was invalid.

5. In case the field serves as the command identifier, check the **Trigger** box, then key-in the identification string in the **Trigger Pattern** boxes. **Compare Type:** Use this field to set the criteria for checking this field against the Trigger Pattern(s) specified below. Possible settings for this field are as follows:

Compare Type	Description
Equal To	The content of the field exactly matches the value specified in the Trigger Pattern.
NOT Equal To	The content of the field not equal to the value specified in the Trigger Pattern.
In Range	The content of the field falls with the range specified in the Trigger Patterns. For example: '5' is in the range of '1' – '9' ('1' and '9' are also in the range)
NOT in Range	For example: '8' is NOT in the range '1' – '5'
Found Within	The contents of the field are found within the value specified in the Trigger Pattern. For example: 'A', 'B', 'C', 'AB', 'BC' and 'ABC' is found within 'ABC'.
NOT Found Within	For example: 'AC' is NOT found within 'ABC'.
Contains	The contents of the field are checked to see if it contains the specified value in the Trigger Pattern. For Example: Field value 'ABC' contains either a 'B' or a 'BC'
Does NOT Contain	Field value 'ABC' does not contain neither a 'D' nor an 'AC'
Is Empty	Checked if the specified field is empty (no characters). This trigger condition will work for delimited and search field type. For fixed fields, this trigger condition will work only if the Trim directive is checked.
Is NOT Empty	Checked if the specified field is not empty (one or more characters).

Note: For Equal To, NOT Equal To, In Range and NOT in Range, the length of the trigger pattern should be same as the length defined in the **General Group – Length**.

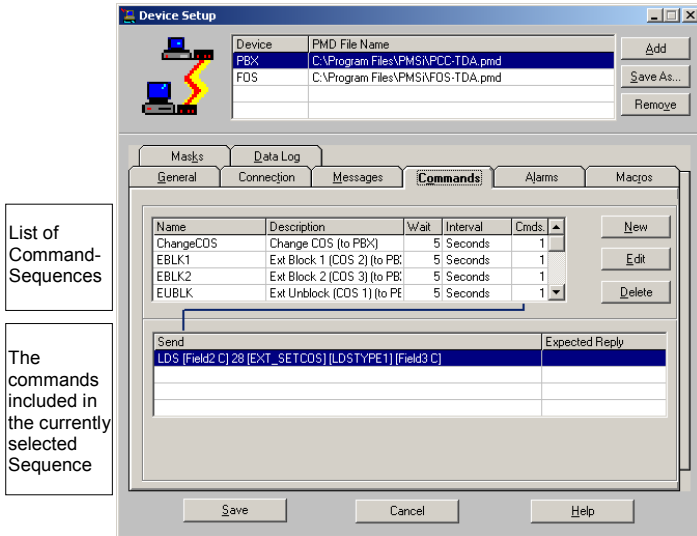
All comparisons are alphabetic and are case sensitive. If more than one trigger fields are defined, they are in **AND** relation. The command will be triggered only if **ALL** defined triggers fields matched.

6. The **Re-map** setting is used to select a remap table to translate the value extracted from the incoming message to some other values. Select **None** if no translation is needed.
7. Click **Save** to save the field changes, or **Cancel** to revert to the previous settings.
8. Add another data field if necessary.

9. Click **Save** to save the message, or **Cancel** to revert to the previous settings.
10. Add another message if necessary.
11. Click **Save** to save the changes, or **Cancel** to revert to the previous settings. PMS Interface software will restart with the new settings if you save the changes.

6.4 Handling Outgoing Command Sequences

PMS Interface translates a **message** received from a source device into a sequence of up to 99 **commands** sent to any one of the destination devices. (The list of device-commands is supplied with the device). The **Command** tab enables you to compose or edit these command sequences:



List of Command-Sequences

The commands included in the currently selected Sequence

For each command-sequence, the following information is presented:

Name (Command Name): the sequence name (for PMS Interface usage).

Description: the sequence description.

Wait, Interval: The amount of time that PMS Interface will wait for a response. The wait interval is only used if an 'expected reply' is specified in a command sequence.

Cmnds.: the number of commands in this sequence. The commands are listed in the box below.

6.4.1. Edit a Command-Sequence

1. Select the command-sequence to be edited from the command list and click **Edit**. The **[Command Setup]** window opens:

The screenshot shows the 'Command Setup' dialog box with the following details:

- Description:** Change COS (to PBX)
- Command Name:** ChangeCOS
- Wait Time:** 5 Seconds
- Timeout Action:** Retry this Command
- Command Action:** Send / Wait

Send	Expected Reply	
LDS [Field2 C] 28 [EXT_SETCOS][LDSTYPE1][Field3 C]		New
		Edit
		Delete

Data Log Only (Warning: If Checked then data will NOT be sent to the actual device)

Buttons: Save, Cancel, Help

2. In the **Description** field, key-in the sequence description.
3. In the **Command Name** field, key-in the command-sequence's name to be used by PMS Interface (you may use all characters except for commas ","). The name must be unique within this device. When defining messages, it is this name that will be listed in the **Command Name** drop-down list.
4. Use the **Wait Time** fields to set the amount of time that PMS Interface will wait for a response. The wait interval is only used if an 'expected reply' is specified in the command sequence. If a reply is not received within the time specified, PMS Interface will re-send the command sequence from the beginning of the sequence.
5. Based on the Max Retries defined in the General tab, PMSi will attempt to send a command several times until a timeout condition is raised. The **Timeout Action** field specifies what action PMSi should take in the event that it fails to send a command (e.g. received a NAK while waiting for an ACK, or no response was received). Possible timeout actions are as follows:
 - **Retry this Command** – Instructs PMSi to retry sending this command.
 - **Skip Only on Active Device** – Instructs PMSi to skip this command only if there was some activity on the device (an ENQ or some response other than the expected response was received). If the device was not active then this command will not be removed from the queue.
 - **Skip Even on Inactive Device** – In all cases this command will be removed from the queue.
 - **Re-Queue on Active Device** – If the device is active, re-queue this command at the end of the queue. If the device is in-active then this command will be retried.

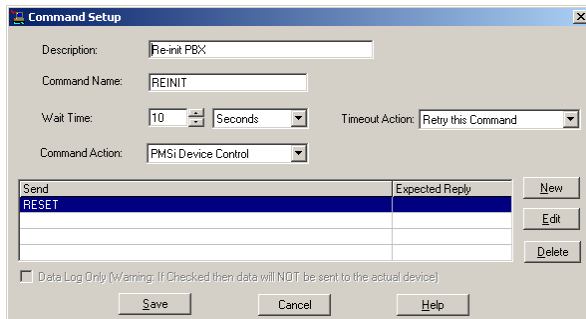
Note: The “skip this command” will be performed only when there are some responses from the target device (although not the expected one). If there is no response from the device, it is considered that the device is down. In such case, PMS Interface will not skip the command and keep sending it to the device until the device responds.

6. Use the **Command Action** to instruct PMS Interface what to do with the command specified below. The two possible actions are as follows:

- **Send / Wait:** This action instructs PMS Interface to send the strings specified below and if indicated wait for responses.

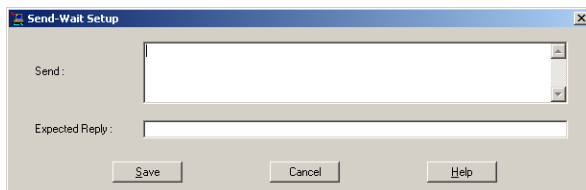
Data Log Only: If checked, then this command is not actually sent to the device. But the command is logged in the DataLog (if commands have been selected to be written to the DataLog) (Available in the future).

- **PMSi Device Control:** This action instructs PMS Interface to use the command specified below as a command to control PMS Interface. Valid PMS Interface control commands are as follows:
 - **RESET** – Instructs PMS Interface to re-initialize the device.



7. To add device-commands to the end of the sequence:

- Click **New**. The following dialog box opens:



- In the **Send** box, enter the name of a device-command or a PMS Interface command. A list of available PMS Interface commands is given in **PMS Interface Commands** below. In the case of serial devices (COMM, Printer, or Display) this is the actual text to be sent. For example:

PBXCOS [Field2] [Field3][13][10]

Assuming that Field2 is 202, Field3 is 2 (because that was the data received from the PBX “COS Change” message) then PMS Interface will send ‘PBXCOS 202 2’ followed by a carriage return and a line feed.

- In the **Expected Reply** box, key-in the expected reply to the command (refer to the device documentation, in case of a device command, or to **PMS Interface Commands** below, in case of a PMS Interface command). For example if the device responds with an ACK character, then you would set this field to [6]. Or you can set “OK”, if the device give a text reply.

The command can also set to wait for an *Event* from the target device. Set [EVENT **EventName**] in the Expected Reply field where the **EventName** is the name set in the *Event* field of message.

There are differences between waiting for a **string** and waiting for an **event**.

- If the system waiting for a **string** (by putting the **string** in the **Expected Reply** field). All messages and commands processing for that device will not be processed until the expected string is received from the device or until the timeout.
- If the system is waiting for an **event** (by putting [EVENT **EventName**] in the **Expected Reply** field) then only that command processing for the device is suspended. New commands to this device will be queued. Messages received for this device will be processed.

The use of “*wait for string*” or “*wait for event*” should be according to the FOS specification.

For example, the “call charge posting” to the FOS may need 2 phases to complete.

First the PMS Interface post the call charge record to FOS, although FOS replied an ACK immediately after received the call charge record, but the call charge posting process not yet complete without an Post Confirm message from the FOS.

The Post Confirm message may be issued from the FOS a few minutes later when FOS finish validate the call charge record. Then in this case, we need to set the Post Confirm message as an Event so that the intermediate messages from FOS (like check in/out) will be processed and the further commands to FOS will be quened.

- Click **Save** to save the new command, or **Cancel** to cancel the addition.
- Click **Save** to save the new command sequence, or **Cancel** to cancel the change.
- Click **Save** to save the changes, or **Cancel** to cancel.

8. To edit a command:

- Select the command to be edited.
- Click **Edit**. The **[Command Setup]** window opens (See above).
- Edit the **Send** and **Expected Reply** fields as explained in step 7 above.
- Click **Save** to save the changes, or **Cancel** to revert to the pervious setting.

6.4.2. PMS Interface Commands

Command Directives

FreeText	Any free text.
[Field <i>n</i> format] or [F. <i>fieldname</i> format]	The value in the field number <i>n</i> (or <i>fieldname</i>) defined in the message body. The actual value will replace the [F...] directive in the command. Before the value is placed in the command, it will be altered by the optional format (is specified) See examples below.
[BCC <i>t s e</i>]	Calculate a Binary Check Character where <i>t</i> is the checksum type (eg. 1=XOR 2=ADD). See table below for a complete list of supported BCC types. <i>s</i> and <i>e</i> are optional. <i>s</i> overwrites the default value (which is 1) of the Start Position for calculating the checksum. If there is an STX at the beginning of the command then <i>s</i> can set to 2 (to ignore the STX); otherwise it is set to 1. <i>e</i> overwrites the default value (which is 0) of the End Position for calculating the checksum. If not to include the last character (eg. ETX), <i>e</i> should be set to 1. Otherwise <i>e</i> should be 0. See example8 below.
[DATE !date format!]	Current PC date (!date format! - is optional, for example !D! for device mask of !mm/dd/yy! for month/day/year format, and mm-dd-yyyy, yy/mm/dd, ...etc are also supported)
[TIME !time format!]	Current PC time. (!time format! - is optional for example !hh:mm! for hours and minutes only)
[STX]	Start of text (ASCII code 02)
[ETX]	End of text (ASCII code 03)
[SEQNO <i>n</i> format]	A <i>n</i> -digit sequence number that will be added to the command where it takes from the sequence no. recorded in the device's General tab. See example5 below.
[Field <i>n</i> Remap <i>v</i> format]	The value of field no. <i>n</i> will be remapped according to the Remap <i>v</i> table definition.
[Field <i>n</i> Remap. <i>tablename</i> format]	The value of field no. <i>n</i> will be remapped according to the Remap (with the remap table name same as <i>tablename</i>) definition.
[STRIP <i>c</i>]	Take out all the characters <i>c</i> from the whole command string before this mask. See example6 below.
[CUT <i>n m</i>]	Remove characters in position <i>n</i> to <i>m</i> from the command string before this mask. See example7 below.
[Macro]	Where Macro is any macro name in the devices macro table. The value of the macro will be inserted.
[<i>ddd</i>]	The ASCII value indicated by the decimal value <i>ddd</i> will be inserted. [13]=carriage return, [10]=line feed, [32]=space, [44]=comma, [5]=ENQ, [6]=ACK and [21]=NAK. For new line insert [13][10]

Note:

- "format", whenever indicated in a command directive, is optional.
- Although all of the above may be used in the Expected Reply field, more likely you will be using only the FreeText, [Macro] and [ddd] directives in the Expected Reply definition.

Bcc Types

Type	Description	Width (bytes)
1	XOR	1
2	ADD	1
3	CRC16	2
4	CRC32	4
5	CCITT	2
6	CRC16SUM	2
7	CRC32SUM	4
8	Adler	4
9	CRC16REV	2
10	MODBUS	2

- If type is negative (e.g. -1) then the BCC value will be the hex value in ASCII.
- If the type is 101-110 then the returned BCC returned will have the left most bit (most significant) masked off.
- If the type is 1001-1010 then the returned BCC will be the remainder when subtracted from either 0x100 or 0x10000, depending of the BCC width.

Table of valid formats

!format mask!	Any valid VBA format mask or a 'D' to denote the Default Device Date Format.
Rn	Take the n rightmost characters of the field value. If there are less than n characters in the field, add spaces to complete the desired length. See example2 below.
Ln	Take the n leftmost characters of the field value. If there are less than n characters in the field, add spaces to complete the desired length. See example2 below.
Zn	Turn the field value into a n -digit string by adding leading zeroes, if necessary. See examples3 below.
Sc	Strip all occurrences of the character c from the field. See example3 below.
C	Clean - Get rid of all unprintable characters from this field. Unprintable characters include control characters like carriage returns and line feeds. See example4 below.
T	Trim all spaces from the beginning and end of a field. Spaces between chars (included unprintable chars such as carriage return/line feed) will not be removed. See example4 below.
D!date format!	Indicates that this field is in PMS Interface standard date format (YYYY-MM-DD). The date format can be dd/mm/yyyy, mm/dd/yyyy or yyyy/mm/dd...etc. See example5 below.

Note:

- More than one format directive and their order may be specified. For example 'CTL10' will first clean, then trim and then left justify a field. D!D!L10 will format a date field using the Default Device Date format and then left justify the value.
- **Rn**, **Ln** and **Zn** must be the last directive in a format in order to keep the fix position of the command.

Example 1:

[Field1] – 202 (The extension number)

[Field2] – 2 (The new class of service)

Send: PBXCOS [Field1] [Field2]

12345678901234567890

Result: PBXCOS 202 2

Example 2:

[Field1] – 202 (The extension number)

[Field2] – 2 (The new class of service)

Send: PBXCOS [Field1 L5] [Field2 R3]

12345678901234567890

Result: PBXCOS 202 2

Example 3:

[Field1] – 202 (The extension number)

[Field2] – Mr. Andy ///Ho (The guest name)

Send: PBXGN SET [Field1 Z5] [Field2 S/]

12345678901234567890123456

Result: PBXGN SET 00202 Mr.Andy Ho

Example 4:

[Field1] – 202 (The extension number)

[Field2] – ^^^Wel^come^^^ (free text)

*where ^ is the space.

[Field3] – Mr. Andy @\$Ho (The guest name)

*where @\$ are the unprintable chars.

Send: PBXGN SET [Field1 L5] [Field2 T] [Field3 C]

123456789012345678901234567890123456

Result: PBXGN SET 202 Wel^come Mr.Andy Ho

Example 5:

[Field1] – 1999/12/31 (Date)

[Field2] – 23:59:59 (Time)

[SEQNO] – 45 (Sequence number)

Send: [SEQNO 5 Z5] [Field1 D!dd/mm/yyyy!] [Field2 !hh:mm!]

1234567890123456789012345

Result: 00045 31/12/1999 23:59

Note: The next command to this device will have the sequence number 46.

Example 6:

[Field1] – /A/B (free text)

[Field2] – /C/D (free text)

[Field3] – /E/F (free text)

Send: [Field1][Field2][STRIP /][Field3]

1234567890123456789012345

Result: ABCD/E/F

Example 7:

[Field1] – ABCDEFGHIJ (free text)

[Field2] – 1234 (free text)

[Field3] – XYZ (free text)

Send: [Field1][Field2][CUT 3 9][Field3]

1234567890123456789012345

Result: ABJ1234XYZ

Example 8:

[STX] – [02] (Start of Text)

[Field1] – 1234 (free text)

[Field2] – XYZ (free text)

[ETX] – [03] (End of Text)

[BCC 1 2 0] – BCC with XOR excluding STX and including ETX.

Send: [STX][Field1][Field2][ETX][BCC 1 2 0]

1234567890123456789012345

Result: @1234XYZ&\

*where @ is the STX, & is the ETX, and\ is the BCC code.

Example 9:

[65] – ASCII Code represent 'A' (free text)

[COMMA] – MACRO defined in the device (MACRO)

[Field1] – XYZ (free text)

Send: [65][COMMA] [Field1]

1234567890123456789012345

Result: A, XYZ

Example 10:

Suppose there exist the remap table no.2 contain the remap information of converting extension number to room number.

[Field1] – 202 (Extension number), should be remap to Room 1234

[Field2] – XYZ (free text)

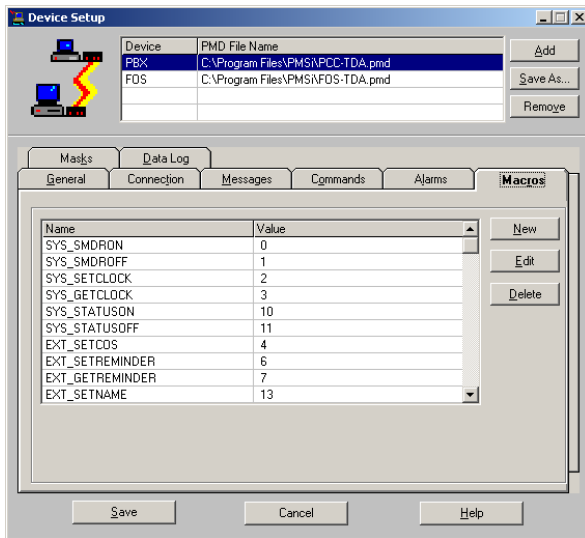
Send: [Field1 Remap2] [Field2]

1234567890123456789012345

Result: 1234 XYZ

6.4.3. Defining Macros (optional)

This tab enables you to define alternative names (short cuts) for commands or command sequences.



6.4.3.1. Add a New Macro

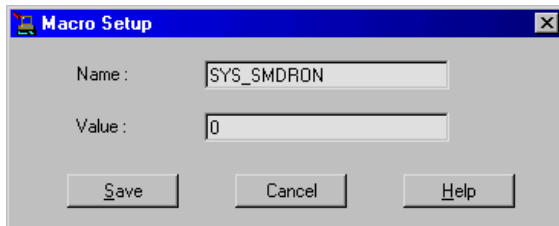
To add a new macro:

1. Click **New**. The **[Macro Setup]** window opens (See below).
2. Define the new macro as explained below.

6.4.3.2. Edit a Macro

To edit a macro:

1. Select the macro to be edited from the macro list and click **Edit**. The **[Macro Setup]** window opens:



2. Use the **Name** field to edit the macro's name. The name must be unique within the device. Do not use the following code.
 - “ , “ comma
 - “ [“ open square bracket
 - “] “ close square bracket
3. In the **Value** field, enter the command sequence. This may be text, number or unprintable characters such as [10]-LF and [13]- CR.
4. Click **Save** to accept the changes you made, or **Cancel** to cancel changes.

6.4.4. Defining Masks

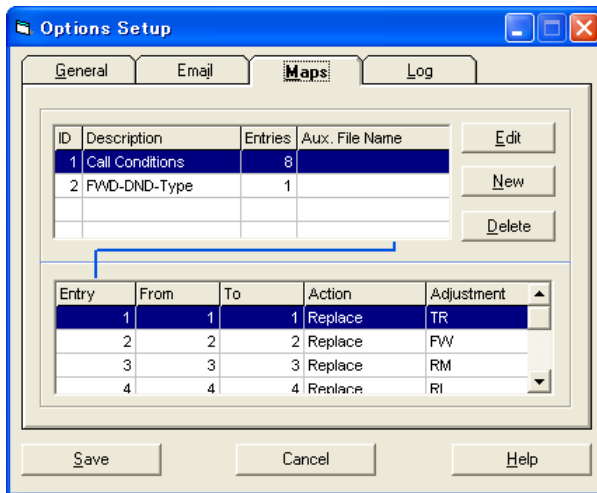
This tab enables you to define the default Dates Mask that will be used by messages and commands for this device. In Message processing, this Mask is used for validating and standardizing a date field. To use this, you can select the “*Device Default*” in the **General Group – Mask** setting when defining the message. In Commands, this Date Mask may be used to format a standardized date field. (Example, [Field1 D!D!] is to use the Device Default date for this field)

6.4.5. Defining Remap (Translation) Tables

Sometimes values of data fields, sent by the source device, have to be changed before the command is sent to the destination device. For example, several rooms (with several extensions) have to be billed to one of the extensions. All the rooms have to be associated with that extension. To solve this problem PMS Interface uses conversion tables.

To construct a conversion table:

1. Select **Options/Define** from the menu.
2. Select the **Maps** tab:



3. Add (New), delete, or edit conversion tables as necessary.

6.4.5.1. Add a New Remap Table

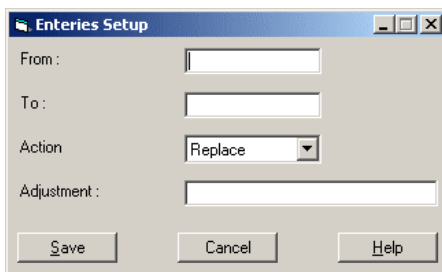
To add a new remap table:

1. Click **New**. The [Map Setup] window opens (See 6.4.5.2 below).
2. Use the **Description** field to edit the remap table's description.
3. In the **Remap ID** field, enter the table's ID number.

Note: Two Maps cannot have the same *Remap ID*. Define the new remap table as below.

4. Select the **Lookup Method** and enter the **Auxiliary Filename**. (Please refer to the description in 6.4.5.2 below.)
5. **To add an entry to the table:**

- ◆ Click **New**. The following dialog box opens:



- ◆ Select the conversion action from the **Action** drop-down list. The available conversions are:
Replace - Replace any string within the range (**From-To**) with **Adjustment**.

Note: The values of the **From** and **To** fields are evaluated like below.

Example: If the field being checked is alphabetic, say from "AA" to "AC" and replace by "Z". Then "AA", "AAB", "AB", "ABB", "AC" will be all replaced by a "Z" but "A", "ACA", "AD" will not be replaced. If the field being checked is numeric, say from "11" to "22" and replace by a "Z". Then "11", "18", "22" will be replaced by a "Z" where "9", "111", "23" will not be replaced.

Add - Add **Adjustment** to any numeric value within the range(**From-To**)

Subtract - Subtract **Adjustment** from any numeric value within the range (**From-To**)

- ◆ In the **From** box, enter the lower limit of the values to be converted. Lower values will not be converted.
- ◆ In the **To** box, enter the upper limit of the values to be converted. Higher values will not be converted.

Note: To indicate a single value and not a range, put the same value in both fields.

- ◆ In the **Adjustment** field, enter the value to be added-to/ subtracted-from/ placed instead of the original value.
- ◆ Click **Save** to save the new entry, or **Cancel** to cancel the addition.

6. Click **Save** to save the changes, or **Cancel** to revert to the previous setting.
7. Click **Save** to add the new table to PMS Interface's configuration.

6.4.5.2. Edit a Remap Table

To edit an existing remap table:

1. Select the remap-table to be edited from the table list and click **Edit**. The **[Map Setup]** window opens:

Entry No.	From	To	Action	Adjustment
1	1	1	Replace	TR
2	2	2	Replace	FW
3	3	3	Replace	RM
4	4	4	Replace	RI

2. Use the **Description** field to edit the remap table's description.

3. In the **Remap ID** field, enter the table's ID number.

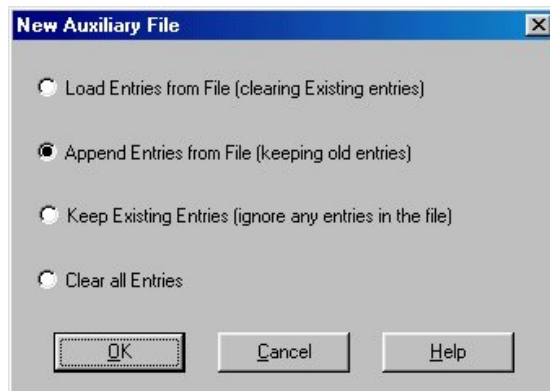
Note: Two Maps cannot have the same Remap ID

4. The Remap Table **Lookup Method** can be **Indexed** or **Search**.

If the entries in a table have a **From-To** range greater than 1000, **Search** method is recommended. Otherwise use the **Indexed** method.

5. The Remap Table can be imported/exported to an auxiliary text file. Type the filename in the Auxiliary Text File. If leave this field blank, the remap table will be saved in the PMS I/F PMI file.

The following screen will appear after entered the filename.



If the entered file exists, there are 4 options available in the screen.

- ◆ **Load Entries from File:** This will delete all the existing remap table entries defined in PMS I/F and load entries from the auxiliary file.
- ◆ **Append Entries from File:** This will keep all the old entries defined in PMS I/F and append the entries from this auxiliary file.
- ◆ **Keep Existing Entries:** This will delete all entries defined in the auxiliary file.
- ◆ **Clear all Entries:** This will delete all entries defined in PMS I/F.

If the entered file does not exist, PMS I/F will create that file and only **Keep Existing Entries** and **Clear all Entries** available.

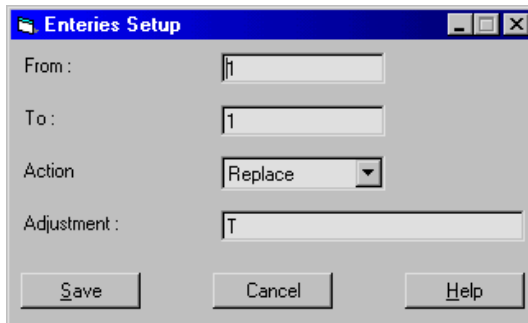
The resulting text file may have the following entries.

```
'From,To,Action,Value  
1,1,0,T  
2,2,0,F
```

It is a comma delimited text file. The first value is the **From** value, then the **To** value, then the **Action** (0 for *Replace*, 1 for *Add*, and 2 for *Subtract*), and last the **Adjustment**.

6. To edit an existing entry:

- ◆ Select the entry to be edited.
- ◆ Click **Edit**. The **[Enteries Setup]** window opens.
- ◆ Edit the **Action**, **From**, **To** and **Adjustment** fields as explained before.

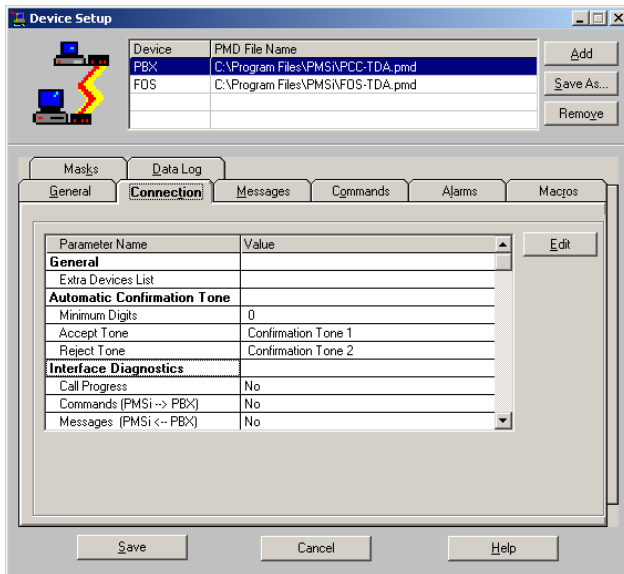


- ◆ Click **Save** to save the entry, or **Cancel** to cancel the change.
- ◆ Click **Save** to save the map changes, or **Cancel** to revert to the pervious setting.
- ◆ Click **Save** to change the table to PMS Interface's configuration.

6.5 Setting Up the Device Connection

Once you added a device and set its connection type, you can define the device connection and set its **parameters**. (There is a different set of parameters for each connection type.)

The connection parameters are listed in the **Connection** tab, along with their current settings. The following example presents the parameters for Panasonic PBX Interface type:

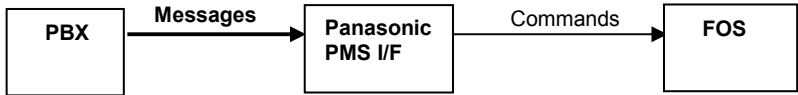


The following section provide connection instructions (both for physical connection and for parameter setup) for KME type.

6.5.1. Connecting KME type

The KME device type enables the connection to the Panasonic PBX interface for Panasonic KX-TDA/KX-TDE Series. Via this connection, information (such as CDR) will be received from Panasonic KX-TDA/KX-TDE Series and control commands (such as Extension Block/Unblock or set Extension Name) will be sent to Panasonic KX-TDA/KX-TDE Series.

The following list of messages (from Panasonic KX-TDA/KX-TDE Series) that are supported by the KME-type device:

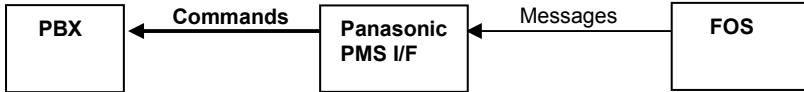


PBX

Panasonic PMS I/F

- | | |
|--|--------|
| Room/MiniBar Status
(Gather Digits) | -----> |
| Extension Block / Unblock
(Change Class of Service) | -----> |
| Wakeup Time Set | -----> |
| Wakeup Time Clear | -----> |
| Wakeup Time Confirm | -----> |
| Do Not Disturb / Call Forward Set | -----> |
| Do Not Disturb / Call Forward Clear | -----> |
| Message Waiting Lamp On | -----> |
| Message Waiting Lamp Off | -----> |
| Guest Name Set / Clear | -----> |
| System Date and Time Report | -----> |
| Station Message Detail Recording | -----> |
| Error Message | -----> |

The following list of commands (to Panasonic KX-TDA/KX-TDE Series) that are supported by the KME-type device:



PBX

- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----
- <-----

Panasonic PMS I/F

- Extension Block / Unblock
(Change Class of Service)
- Wakeup Time Set
- Wakeup Time Clear
- Do Not Disturb / Call Forward Set
- Do Not Disturb / Call Forward Clear
- Message Waiting Lamp On
- Message Waiting Lamp Off
- Guest Name Set / Clear
- Credit Limit Exceeded
- Set System Date and Time
- Get System Date and Time
- Check In
- Check Out
- Confirmation Tone

6.5.1.1. Special Considerations

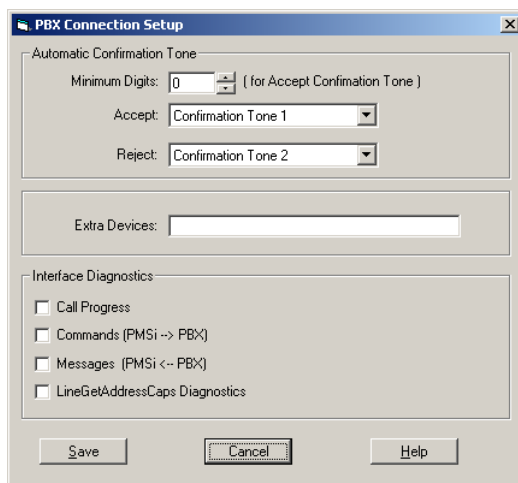
Panasonic TAPI* Service Provider for TDA Series (Panasonic KX-TDA TSP) needs to be installed. In order to begin the installation, please refer to KX-TDA TSP Installation Manual.

* TAPI (Telephony Application Programming Interface introduced by joint development of Microsoft and Intel) is a standard Interface that enables a computer application to control the PBX.

6.5.1.2. Setup Parameters

To access the connection parameters:

1. Select **Devices/Setup** from the PMS Interface menu.
2. Select the affected device.
3. Choose the **Connection** tab and click **Edit**. The following window opens:



4. Set the parameters as follows:

- ◆ **Automatic Confirmation Tone (for the Gather Digit function of PBX)**

Gather Digit function is to show the room status and minibar status to FOS. For example, if the housekeeper finds room 202's TV cannot turn on, he/she picks up the room phone and press 717555#. He/she will hear a *confirmation tone* from handset then hang up. Provided the 717 is the Gather Digit access code, 555 is the code for "TV damaged" then PBX will send 555 (ASCII TEXT) to FOS.

For this reason, the *confirmation tone* needs to be set here in order to notify the housekeeper his/her message was confirmed.

Minimum Digits setting check the minimum digit required in the status code. If the number of digits of the entered status code (555 in the above example) is less than the minimum digits setting, then a *reject tone* will be issued provided that the *reject tone* was set (other than none.)

The **Accept** (successful reception of digits) or **Reject** (not successful reception of digits) *Confirmation Tone* can be set to either Tone 1 to Tone 4 or none from the list.

In the case that FOS do not have the capability to analyze the correctness of the incoming Gather Digits message, then the **Automatic Confirmation Tone** Type must be set in PMS Interface in order to confirm the correct reception of Gather Digits from the housekeeper. Then **Accept / Reject** should be set to either *Confirmation Tone* 1, 2, 3 or 4 and set the **Minimum Digits** according to the FOS requirement.

For a FOS which have the capability to analyze the correctness of the incoming Gather Digits message, then the above setting of Accept / Reject Confirmation Tone is optional.

- If the Accept/Reject Tone were set, then the housekeeper will receive the confirmation tone (which is set in the PMS Interface) once the PMS Interface received the Gather Digit message correctly.
- If the Accept/Reject Tone were set to None, the housekeeper will receive the confirmation tone (selected by FOS) only after PMS Interface pass the Gather Digits message to FOS and FOS responded it.

Note: Set Gather Digits Access No.

When you use gather digits function with this new ROM software, you need to set system programming.

In case of KX-TDA/KX-TDE Series

Gather Digit Access setting by PC programming

- (1) Select "2.System/6.Numbering Plan/1.Main" in the menu and then "2.6.1.Main" window appears.
- (2) Choose the *Feature* tab.
- (3) Move Scroll Bar toward a lower position in the window to make "65 Dial Information (CTI)" appear.
- (4) Enter Special Number (Eg. *717) not used for PBX, into the Dial cell in "65 Dial Information (CTI)".
- (5) Press Apply button to save it (update PBX data).

- ◆ **Extra Devices:** Reserved for internal use. DO NOT EDIT.

- ◆ **Interface Diagnostics:**

The following types of detail communication data may be monitored in the main PMS Interface window.

1. Call Progress
2. Commands to PBX
3. Messages to PMS Interface
4. LineGetAddressCaps Diagnostics (Available in the future)

Reserved for internal use. DO NOT CHECK ANY BOX.

6.5.1.3. Testing Communication

To test the connection, you may perform the following:

Start PMS Interface. Upon successful completion of the communication with Panasonic KX-TDA/KX-TDE Series (usually take a while), you should see in the PMS Interface Status box the following messages.

[PBX] Extension Devices opened: 40

[PBX] Startup result: Succeeded

The '40' in the first message is the number of devices detected on Panasonic KX-TDA/KX-TDE Series. This is not the number of extensions in your system. This number may vary from installation to installation. **However, if this number is 0 (zero), means the attempt to establish the KME connection has failed.**

6.5.2. Connecting a Comm (RS232)-Type Device

A COMM type device is connected to the PC via the RS-232C communications port (serial port) to communicate to FOS software provided by other companies

For Panasonic PMS I/F software, the following interfaces are available.

- PMS Interface Specification for Panasonic Default
This is Default Specification Panasonic recommends.
For details, refer to PMS Interface Specification for TDA (Panasonic Default) in the Appendix of Operating Instructions.
- PMS Interface Specification for Fidelio
This is the interface provided by Marcos Fidelio for Fidelio software.
Fidelio License name: TMS I/F-T.A.B.S. PMS and Call Accounting
For details, refer to PMS Interface Specification for TDA (Fidelio) in the Appendix of Operating Instructions.
- PMS Interface Specification for Eltrax
This is the interface provided by Eltrax for LAN mark software.
Eltrax Reference Number: MTS210
For details, refer to PMS Interface Specification for TDA (Eltrax LANmark) in the Appendix of Operating Instructions.
- PMS Interface Specification for HIS
This is the interface provided by HIS.
HIS IPU version: 2.12.0
MTS Interface code: TMS KMEPBX
For details, refer to PMS Interface Specification for TDA (HIS) in the Appendix of Operating Instructions.
- PMS Interface Specification for TABS
This is the interface provided by MTS.
TABS call accounting for Windows version: 3.980 build 364
For details, refer to PMS Interface Specification for TDA (TABS Call Accounting for Windows) in 8.5 of Operating Instructions.

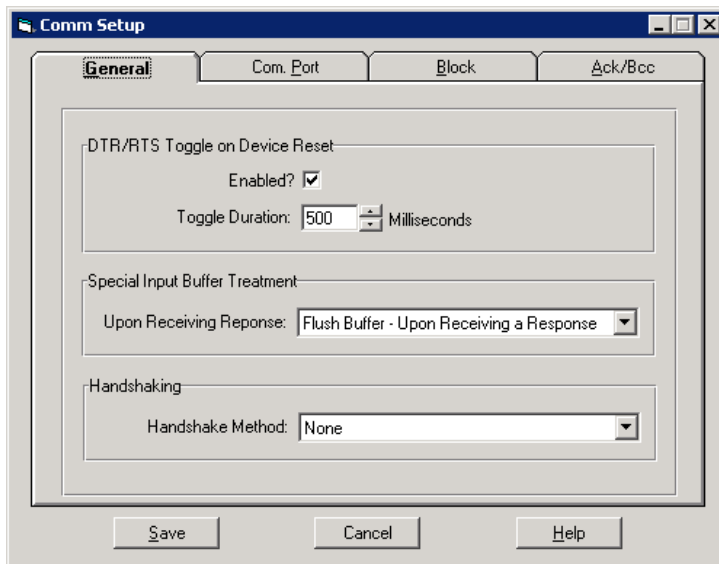
6.5.2.1. Special Considerations

Very often one of the COMM ports of the PMS Interface computer will be used for the mouse. In other cases, a COMM port may be used for an external modem while in yet other instances, a COMM port will be taken by an Internal Modem. When ordering the computer hardware for a PMS Interface installation, be sure to order a machine with enough available COMM ports.

6.5.2.2. Setup Parameters

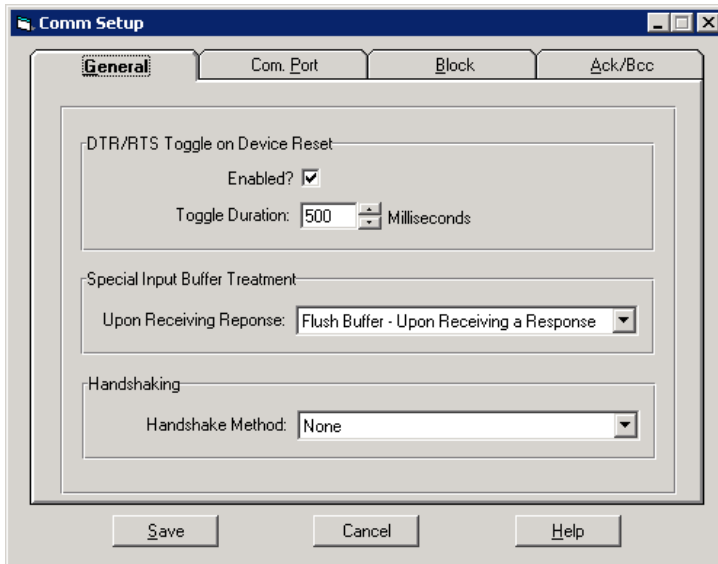
To access the connection parameters:

1. Select **Devices/Setup** from the PMS Interface menu.
2. Select the affected device.
3. Choose the **Connection** tab and click **Edit**. The following window opens:



The parameters in each tab are described below.

▪ The General Tab



The parameters in this tab are:

DTR / RTS Toggle on Device Reset:

(a) Enabled: Check this box to toggle (On and Off) the DTR and RTS control lines of the RS-232C port. Upon reset, PMS Interface will toggle the RTS and DTR signals of the COM port, some devices (like modem) will then be instructed to perform an internal re-initialization.

(b) Toggle Duration: The time period (in milliseconds) between turning Off the control lines and turning them On again. A period of 500 milliseconds (1/2 second) is usually sufficient.

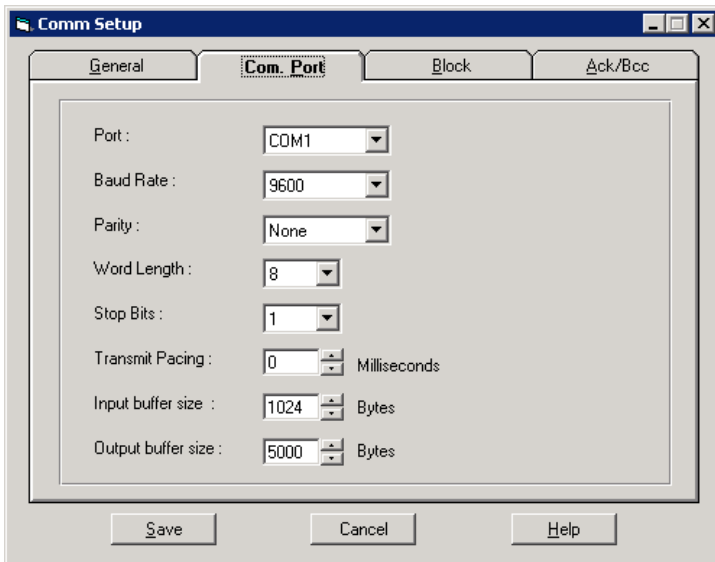
(c) Special Input Buffer Treatment Upon Receiving Response: When a command is sent to the device and a wait for string is specified, PMSi may be instructed to perform the following operation on any unprocessed data in the RS232 input buffer:

- ◆ Flush Buffer: Completely clears the input buffer
- ◆ Keep Buffer removing the response that was being 'waited for'
- ◆ Keep the entire buffer (including the response just 'waited for')

(d) Handshake Method: RS232 employs several standard hand shake methods to control the flow of data between devices. This parameter allows you to choose an appropriate handshake method. Possible methods are as follows:

- ◆ XON / OFF
- ◆ RTS
- ◆ RTS & XON / XOFF
- ◆ None

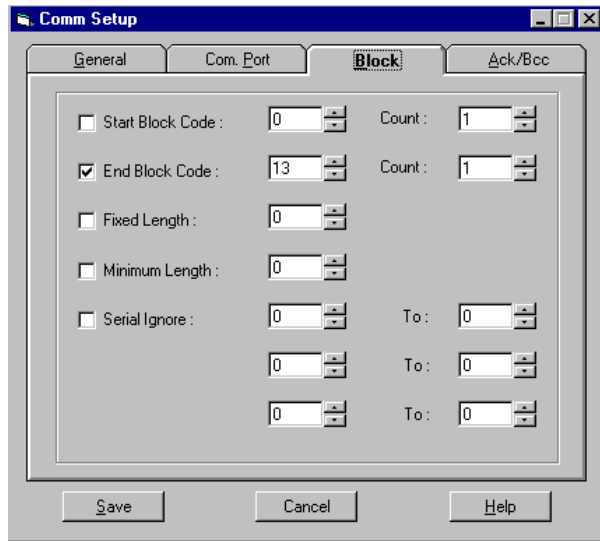
▪ **The Com. Port Tab**



Make sure the COM and Baud rate setting are correct.

- ◆ If connecting to fast devices with high volumes of data, set the input buffer size to 32000.
- ◆ If command lengths are very long, set the output buffer size to 2048.

- **The Block Tab**



The parameters in this tab configure the incoming data block:

- ***Start Block Code* and *Count*:**

The ASCII code of the character, which is transmitted before all valid messages (PMS Interface **does not** store this character as a part of the message). A common example of a ***Start Block Code*** is a 02 (STX) with a ***Count*** of 1. In case the ***Count*** is set to 2, PMS Interface will only receive the message after the second ***Start Block Code***. Those messages between the first and second ***Start Block Code*** will be ignored. There are, however, many devices that do not transmit a Start code before a message. In those cases, the ***Count*** field must be set to 0 to make ***Start Block Code*** disabled.

- **End Block Code and Count:**

The character that terminates all messages. The 'end' character **is** included in the message. Common examples for an end code are 03 (ETX), 10 (Line Feed) or 13 (Carriage Return). Usually, a **Count** of **1** is used. In case the **Count** is set to 2, PMS Interface receives all messages up to the second **End Block Code**. In the rare case that a device does not transmit an End Character, then the **Count** field should be set to 0 and the Fixed Length setting should be used.

Note: Count of up to 255 may be defined for **start** or **end** characters.

- **Fixed Length:**

In the rare case where a device is transmitting messages with no **End Block Code** and the messages are all fixed length, then the length of the message should be specified in this parameter. For example 5 is set in the Fixed Length field, then PMS Interface will recognize a new message after received every 5 characters from the device.

Note: The **End Block Code** must be disabled in this case. If the **End Block Code** is set, then the **Fixed Length** setting will be ignored.

- **Minimum Length:**

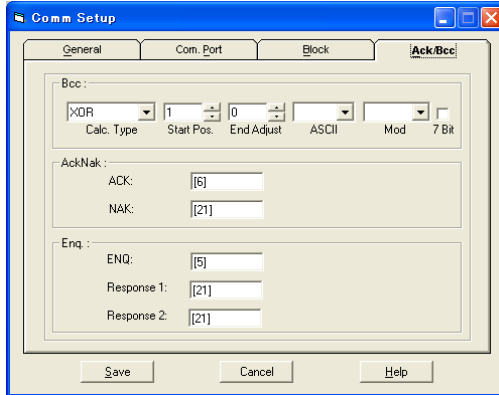
The minimum length of a valid message. PMS Interface will ignore (discard) shorter messages.

Maximum 255 may be defined.

- **Serial Ignore:**

Sometimes it is helpful and even necessary to consider some of the received characters as **not** being a part of the message. For example, some devices may send **control characters** within the message. For ease of parsing fields, you may choose to ignore these control characters. To ignore control characters within a certain range of ASCII code, check the **Serial Ignore** box and specify the ASCII codes range (e.g., 0-9) that you want to ignore.

- **The Ack/Bcc Tab**



The parameters in this tab configure the communication's handshake method:

Bcc:

Messages received by PMS Interface may be followed by a BCC (Binary Check Character), which enables PMS Interface to verify that the message has been received correctly (no lost or corrupted data). The following parameters control the BCC calculation:

(a) Calc. Type:

This parameter specifies the BCC algorithm to be used in order to calculate the BCC character for each message. Examples of BCC algorithms are XOR and ADD (See table below for more BCC types). Setting this parameter to **None** disables the BCC check.

Bcc Types

Type	Description	Width (bytes)
1	XOR	1
2	ADD	1
3	CRC16	2
4	CRC32	4
5	CCITT	2
6	CRC16SUM	2
7	CRC32SUM	4
8	Adler	4
9	CRC16REV	2
10	MODBUS	2

(b) Start Pos.:

This parameter specifies the first character of the message to be included in the BCC computation (the characters before this position are ignored).

The values 1 indicate that BCC calculation begins with the first character of the received message.

In case of STX, if STX is defined as the **Start Block Code**, then the STX is automatically removed from the message when it is received by PMS I/F, so setting **Start Pos** to 1 will already exclude the STX in the BCC calculation. BUT if the STX is not set as **Start Block Code**, then the STX is included in the message received by PMS I/F, then if the STX need to be excluded, the **Start Pos** should set to 2.

(c) End Adjust:

This parameter specifies the last character of the message for BCC calculation purposes. Any characters beyond this position are ignored when calculating BCC.

The values 0 indicate that BCC calculation ends with the last character (for example the ETX.) In order to exclude the ETX, set the value to 1.

(d) ASCII:

This parameter when checked, instructs PMSi to convert the hex value of the calculated BCC to ASCII (Available in the future).

(e) 7 Bit:

This parameter when checked, instructs PMSi to mask off the most significant bit (leftmost bit) of the calculated checksum. For example, the calculated checksum value of 0xF9 will result in 0x79 (Available in the future).

(f) Mod:

This parameter when checked, instructs PMSi to subtract the calculated checksum from 0x100 or 0x10000 (depending on the length). The calculated checksum of 0x77 will return 0x89 (Available in the future).

Ack / Nak:

When PMS Interface receives a message and the BCC check is enabled (See above), then the following parameters are used to define the proper response to the device depending on whether the BCC check passed or failed.

(a) ACK:

The signal sent to the device whenever a valid message is received. This parameter is typically set to **[6]** (ASCII code 06). However, when required this parameter may be set to any character or set of characters (e.g. **OK [13]** - the word 'OK' followed by a carriage return).

(b) NAK:

The signal sent to the device whenever an invalid message is received. This parameter is typically set to **[21]** (ASCII code 21). However, when required this parameter may be set to any character or set of characters (e.g. **NOT OK [13]** - the words 'NOT OK' followed by a carriage return).

Enq.:

Some devices send an 'enquiry' character (ENQ) in an attempt to verify that PMS Interface is ready to receive a message. Upon PMS Interface's reception of the ENQ, either 'Response 1' or 'Response 2' is immediately sent to the device that issued the ENQ:

(a) ENQ:

This parameter defines the value of the ENQ character or string. Typically, this field is set to **[5]** (ASCII code 05).

(b) Response 1:

Defines PMS Interface's response to the ENQ, in case PMS Interface is **not** waiting for some reply to a command previously sent (by PMS Interface) to the device. Typically set to the same value as the **ACK**.

(c) Response 2:

Defines PMS Interface's response to the ENQ, in case PMS Interface **is** waiting for some reply to a command previously sent (by PMS Interface) to the device. Depending on the system, either set to the same value as the **NAK** or the **ACK**.

6.5.3. Connecting a TCP/IP-Type Device

A TCP/IP type device connects the PC to an FOS via the LAN or WAN connection using the TCP/IP protocol.

PMSi's implementation of the TCP/IP device type is very similar to the RS232 device type. Meaning, the protocol definition at the Start Block, End Block, ACK, BCC and ENQ levels are functionally identical to that of RS232. The difference between RS232 and TCP/IP lies in the way that the two machines connect to one another. Instead of RS232 Com ports, TCP/IP makes use of IP addresses and ports to interconnect between two systems (over a LAN or WAN).

It is assumed that before reading this section, you are already familiar with the PMSi RS232 device type. If not, take some time to familiarize yourself with those concepts.

6.5.3.1. Special Considerations

When connecting two computer systems via TCP/IP one machine is designated as a server and one as client. The server waits (listens) for a connection from a client.

Each machine in a TCP/IP configuration has an IP address. The Client connects to a server by specifying the servers IP address. Additionally, when establishing a TCP/IP connection there is a Port number. So when a client connects to a server, in addition to the IP address, the listener's Port number must also be specified.

Note: The Port number allows for many TCP/IP connections within a single IP address. IP port numbers are very often related to applications. Some reserved Port numbers that relate to specific applications are:

- Port 80 – HTTP (web browsers)
- Ports 20 & 21 – FTP (file transfer protocols)
- Port 23 – Telnet protocol
- Port 25 – SMTP (email protocol)

When connecting to an FOS server the installer must request / know the FOS's IP address as well as the IP port.

If PMSi is configured as a server (i.e. the FOS is the client) then the FOS must be informed of PMSi's IP address and Port.

The IP address of the PMSi system may be retrieved via the **IPCONFIG** command (run from the **cmd** prompt).

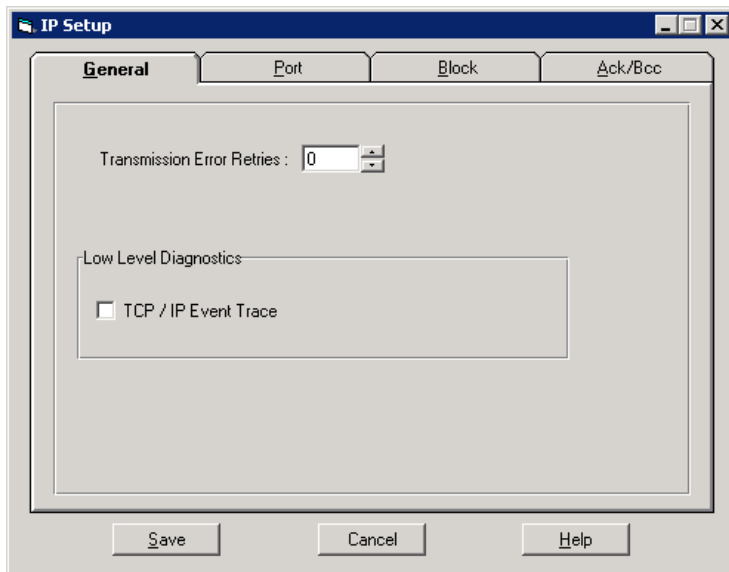
When configuring the PMSi TPC/IP device as a server, then an arbitrary Port number (typically, a port number within the range of 51000 - 51099 is specified).

Once a connection is established, the TCP/IP may be thought of as a serial device very similar to that of RS232.

6.5.3.2. Setup Parameters

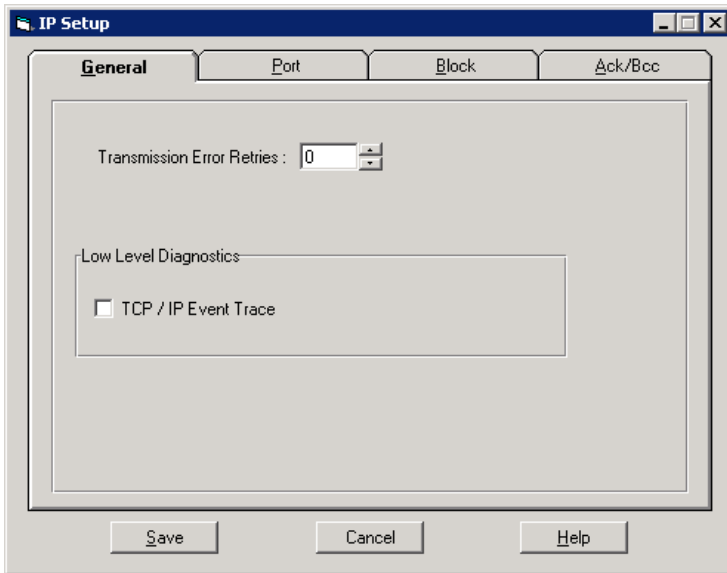
To access the connection parameters:

4. Select **Devices/Setup** from the PMS Interface menu.
5. Select the affected device.
6. Choose the **Connection** tab and click **Edit**. The following window opens:



The parameters in each tab are described below.

The General Tab



The parameters in this tab are:

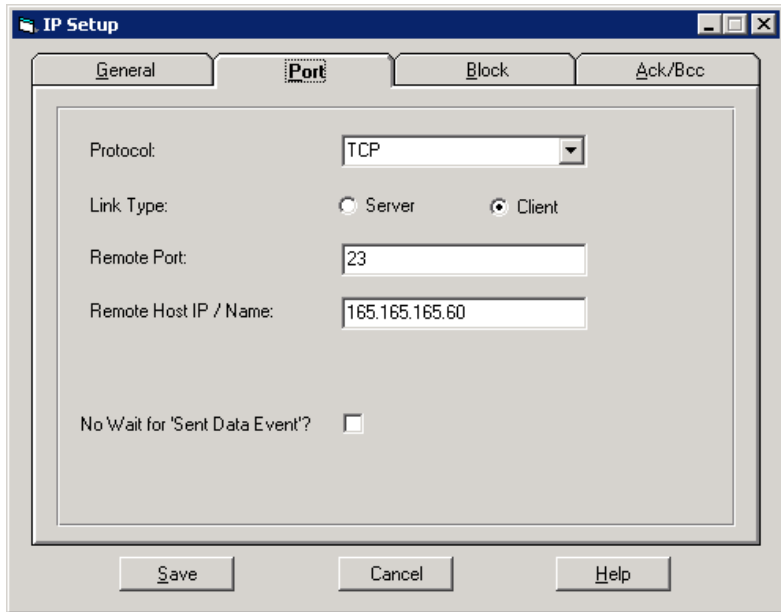
- ***Transmission Error Retries:***

A setting greater than 0, instructs PMSi to re-try any TCP/IP transmission that resulted in an error. After the number of re-tries has been attempted, PMSi will treat the attempted write as 'failed'

- ***TCP/ IP Event Trace:***

Enabling this parameter instructs the TCP/IP device driver to log TCP/IP events. This parameter could be enabled to diagnose communications problems between PMSi and the connected device.

The Port Tab



The parameters in this tab are:

- **Protocol:**
Choose either *TCP* or *UDP*. Normally *TCP* is used.

- **Link Type:**

Choose either *Client* or *Server*.

If you choose *Client*, then you will need to specify both an IP address and a Port number. If *Server* is selected then only a Port number need to be specified.

- **Remote Port:**

Enter the port number to be used for this TPC/IP connection. If you are the *Client* then the Port number must be supplied by the device to which you are connecting. If you are a *Server* then you must provide the Port number to the device which will attempt to connect to you. As a server the Port number that you select is arbitrary. Meaning,

you can select any address within the range of 0 - 65536. In an attempt to not conflict with other Port numbers that way already be in use, it is recommended that a Port number within 51000 – 51099 should be used.

Note: In the example above, the Port number is set to 23 which is the Telnet port. This implies that PMSi is connecting to the server as a Telnet client.

- **Remote Host IP / Name:**

Enter either the IP address (e.g. 10.10.1.151) or the DNS name. This parameter is applicable only if you are defined as the *Client*.

If the system to which you are connecting is on the same computer as PMSi, then IP address **127.0.0.1** or **LocalHost** can be used.

Specify the IP address or the DNS name to be used when connecting to the Device. This address must uniquely identify the target device on your network. Additionally, if the device that you are trying to connect to resides outside a firewall (or behind a firewall outside the LAN that PMSi resides in), the IT managers involved may need to configure their firewalls to allow the connection.

An IP address is in the form of aaa.bbb.ccc.ddd (e.g. 10.10.1.151)

A DNS (or computer name) may be in the form of www.somesite.com or [\\somecomputername](http://somecomputername).

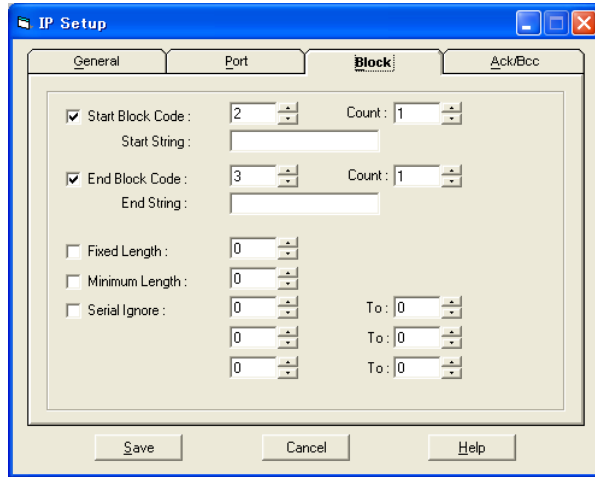
- **No Wait for 'Data Sent Event'?**

Normally, when a command is sent to a device via TCP/IP, PMSi will wait for a low level acknowledgment from the receiver before allowing another command to be sent.

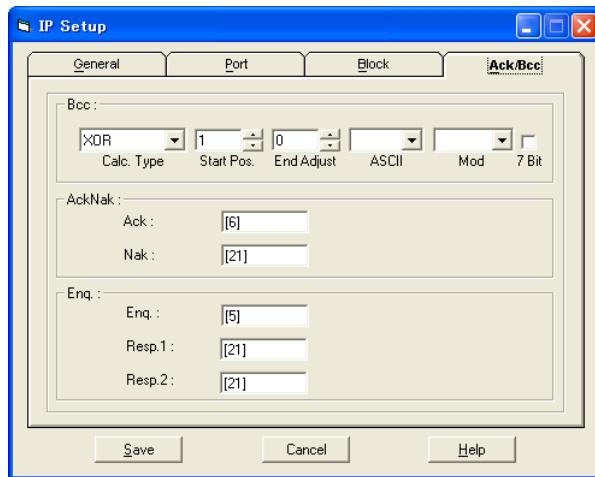
If this parameter is enabled, then PMSi will not wait for the low level acknowledge and continue to send the next command immediately.

Note: This setting does not affect the 'wait for' settings in the command definition.

- **The Block Tab**




- **The Ack/Bcc Tab**



Same as RS232 described above.

6.5.3.3. Testing Communication

1. In PMS Interface's main window, double-click on the **Data-Scope** icon  next to the device's name.
2. The [**DataScope**] window opens, enabling you to view the raw data exchange between PMS Interface and the device.
3. After verifying that the communications is working properly, double-click the **Data-Scope** icon again to close the [**DataScope**] window.

Serial No

Panasonic Communications Co., Ltd.

1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka 812-8531, Japan

© 2006 Panasonic Communications Co., Ltd. All Rights Reserved.

PSQX1806VA-UU KK0800SH4019 (X)