4.3.7 Copy Data

This function is used to copy the operating data from the ACT SDM to the SBY SDM. The automatic SDM switching is not supported for this function.

1. From the **Configure** main menu, click ***Service Data***, and then ***Write Data***. This opens the **Write System Service Data** window, as shown in the figure below.

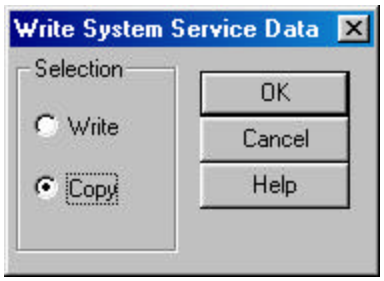


Figure 4-52: Write System Service Data Window

2. Click the ***Copy*** radio button and then click ***OK***. A confirmation dialog box appears, as illustrated in the figure below. Click ***OK*** to confirm the copying command.

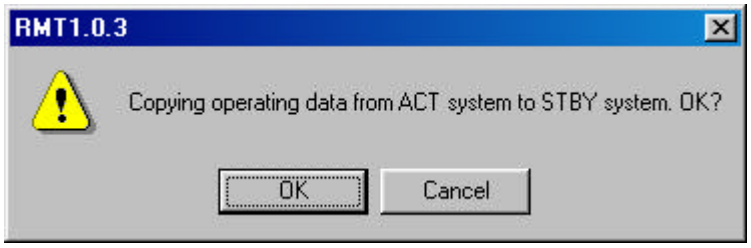


Figure 4-53: Confirmation Dialog Box

4.3.8 Edit Data

RPC operation data contain three categories:

1. Service data 1: RP installation
2. Service data 2: Group control configuration
3. Service data 3: System parameters

Use this function to edit an existing operation data file while the RPC is operating.

☞ NOTE: *Operation data must be edited locally in a file, and then downloaded to the system.*

4.3.8.1 Service Data 1: RP Installation

1. From the **Configuration** main menu, click the ***Service Data*** option, and then the ***Edit Data*** option. This brings up the **Specify File for Edit** window, as shown in the figure below.

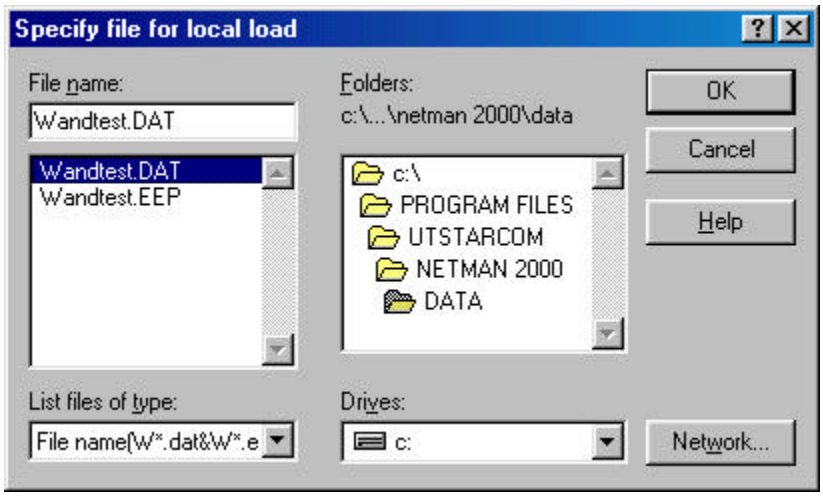


Figure 4-54: Specify file for Edit Window

2. Select the target **.dat** or **.eep** file and click ***Open***. The system edits all the files with any one of the two suffixes. The **Edit of Service Data 1** window opens, as shown in the figure below.

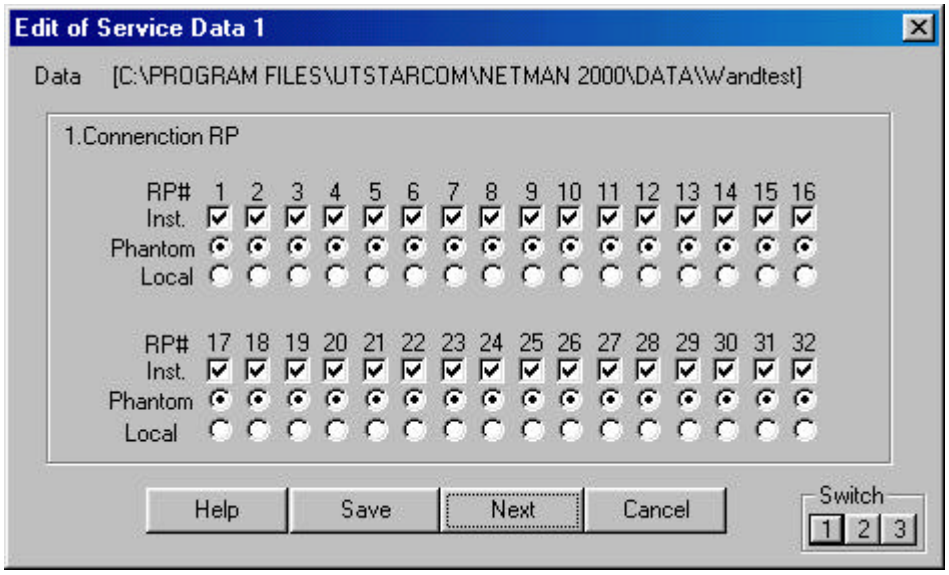


Figure 4-55: Edit of Service Data 1 Window

Field Name	Description
RP#	RP ID number
Inst.	Set "installed" or "not installed" for RPs according to RP installation plan.
Phantom	The power is supplied by the RPC.
Local	The power is supplied by the RP power unit.
Save	Save the setting to a local file.
Next	Switch to the next Service Data window.
Cancel	Cancel the editing.
Switch 1,2,3	Switch to one of the three Service Data windows.

Table 4-12: Edit of Service Data 1 Window Field Description

3. For each installed RP, enter a √ in the Inst. row. For each installed RP, specify the power source by clicking on either the ***Phantom*** button or the ***Local*** button. For WLL, the power source is ***Phantom***. ***Local*** is for future use when the power is 20 milliwatts or higher.

4.3.8.2 Service Data 2: Group Control Configuration

1. To get to the **Edit of Service Data 2** window, click ***Next*** or ***Switch 2.*** The **Edit of Service Data 2** window opens, as shown in the figure below.

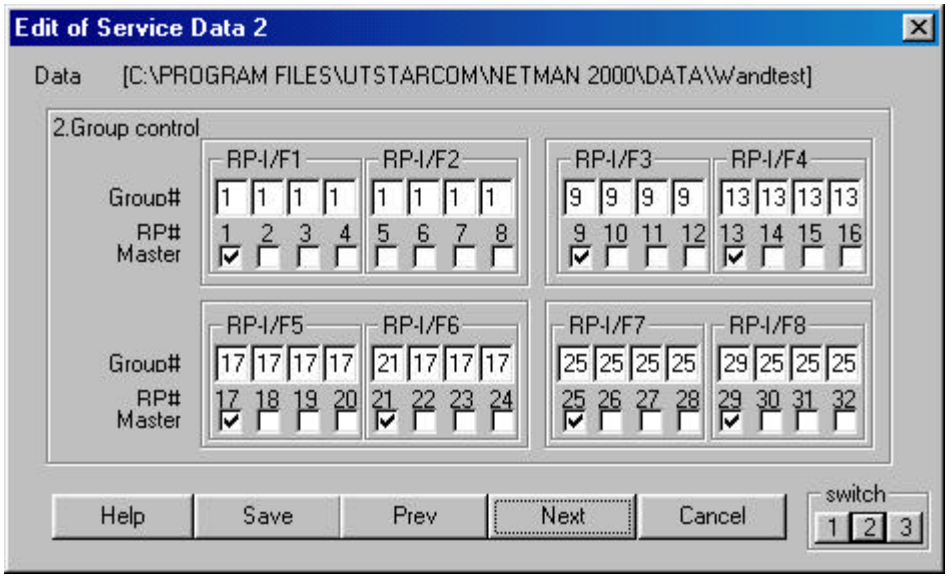


Figure 4-56: Edit of Service Data 2 Window

Field Name	Description
RP-I/F	RP interface ID number
Group #	Group ID number
RP#	RP ID number
Master	Master/Slave status of the RPs
Save	Save the Service Data toa a file.
Next	Switch to the next window

Table 4-13: Edit of Service Data 2 Window Field Description

NOTE: *RP ID numbers are defined according to the connected physical port numbers on the RP interface boards, as listed below:*

RP-IF#1 port 1 ----- RP#1
RP-IF#1 port 2 ----- RP#2
RP-IF#1 port 3 ----- RP#3
RP-IF#1 port 4 ----- RP#4
RP-IF#2 port 1 ----- RP#5
…..
RP-IF#3 port 1 ----- RP#9
…..
RP-IF#8 port 1 ----- RP#29
RP-IF#8 port 2 ----- RP#30
RP-IF#8 port 3 ----- RP#31
RP-IF#8 port 4 ----- RP#32

2. This window is for the configuration of Group Control. Group Control maximizes the number of channels available for traffic by allowing one control channel to control up to 8 RPs (up to 31 traffic channels). A group can be set up only within two adjacent RP interface boards. Group members must be within the two RP Interface boards. For each RP, enter the group number and designate the master. In the above window, 7 RPs on RP Interface card 5 and 6 are in group 17 with the master RP designated as RP number 17. The master RP must be the RP with the lowest RP number in the group. The RPs that are not in group control must be designated as their own masters and have their own group numbers, as is the case for RP# 21 in the above figure.

4.3.8.3 Service Data 3: System Parameters

The third **Edit of Service Data** window contains system parameters. It is not necessary to administer the parameters, as they are set at the factory. Users can only change the relevant values for the parameters. Click on ***Next*** or ***Switch 3*** to open the **Edit of Service Data 3** window, as shown in the figure below.

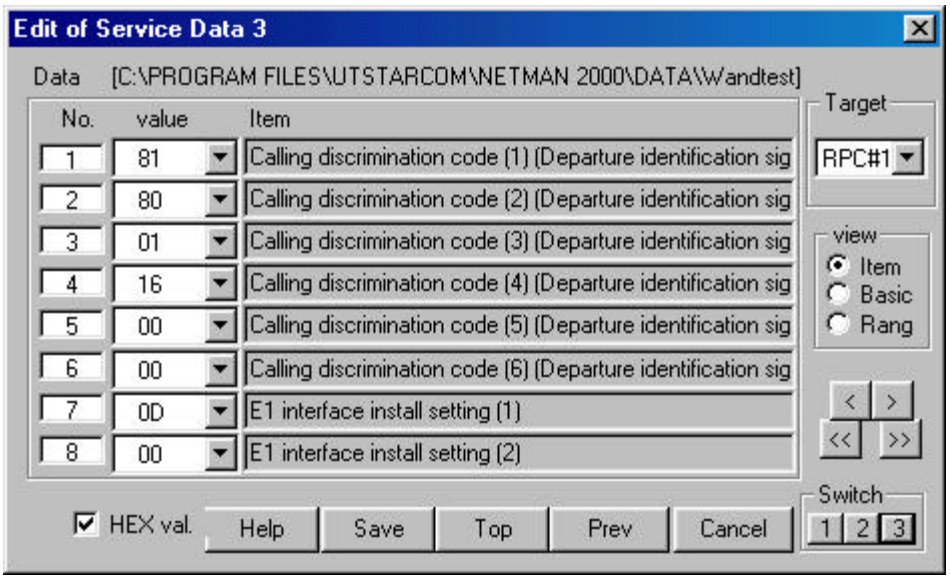


Figure 4-57: Edit of Service Data 3 Window

Field Name	Definition
No.	Item sequence numbers, starting from 1
Value	Specified value for the item. The value can be selected from the arrow drop-down list.
Item	Item name and value description
Basic	Basic value
Unit	Item value unit
Min	The minimum value which can be specified for the item
Max	The maximum value which can be specified for the item
HEX val.	Switch between the hexadecimal and the decimal value
Button Name	**Description**
Target	Select the target PRC ID number to display its system parameters.
Item	Only item names are displayed on the right column.
Basic	Basic value, unit value, and item names are displayed on the right column.
Range	Maximum value, minimum value, unit value, and item names are displayed on the right column.
<	Scroll the window downward one line at a time.
>	Scroll the window upward one line at a time.
<<	Scroll the window downward one page at a time.
>>	Scroll the window upward one page at a time.
Save	Save the value setting.
Top	Go to Service Data 1 window.

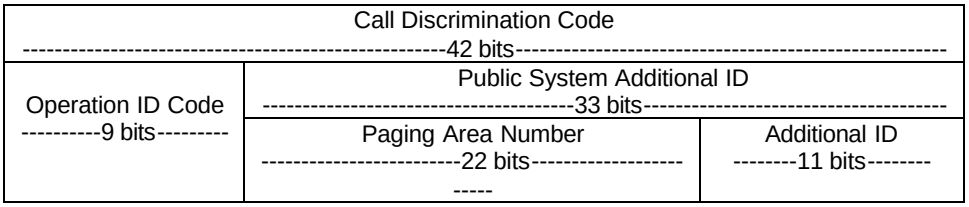
Table 4-14: Edit of Service Data 3 Window Field Definition

There are three different windows for this function: **Item**, **Basic**, and **Range**. Use the **View** Block to switch to different windows. Edit the data as necessary and click ***Save***. A confirmation box appears, prompting: "Current file will be replaced by this contents. OK?" Click ***Yes*** to confirm or ***No*** to stop the transaction.

The operation data in the **Item** block contain many system parameters. They are for view only. Users should use the ***Arrow*** drop-down list in the **Value** field to make any necessary change to the setting. Each of the system parameters in the Item block is described as follows:

Call discrimination code

The length of the Call Discrimination Code data field is 48 bits, but the last 6 bits are not used. So the remaining 42 bits are used for call discrimination code. The value determines the RP-ID (CS-ID). And it needs to be unique among all RPCs. The following diagram describes how the 42 bits are split into several divisions.



Operator ID Code: MSB is always set to "1". The remaining 8 bits are used for Operator ID. The Operator ID's of all RPs that connect to the same RPC take the same value, and the value is equal to the setting value of this data field.

Paging Area Number refers to the area where the call is broadcast for the FSU or PS that has location registration for that area. In effect, PS doesn't need to request location registration while it stays inside the area, even if it switches RPs. The Paging Area Number of all RPs that connect to the same RPC takes the same value, and the value is equal to the setting value of this data field.

Additional ID (11bits) of this data field is set from "00000000000" to "11111100000". The upper 6 bits of the Additional ID of the RPs that connect to the same RPC take the same value, and the value is equal to the setting value of this data field.

The first 37 bits of this Call Discrimination Code correspond to the RP-ID (CS-ID) of each RP that connects to the same RPC, and the value of the 37 bits is the same for all the RPs which connect to the same RPC. The last 5 bits are unique for each RP under the same RPC, as illustrated below:

RP #	RP #1	RP #2	RP #3	RP #4	……	RP #32
Last 5 bits	00000	00001	00010	00011	……	11111

For instance, when the field data (48bits) of the Call Discrimination Code are 9E 00 00 00 03 80 (HEX), the RP-ID (42 bits) of RP#4 is as follows:

1001 1110 0000 0000 0000 0000 0000 0000 0000 0011 11 (Binary)
Operator ID: 1001 1110 0 (Binary)
Paging area: 000 0000 0000 0000 0000 000 (Binary)
Additional ID: 0 0000 0011 11 (Binary)

☞ NOTE: *The RP-ID that is described in this section is used between RP/RPC and FSU/PS. The RP-ID is also defined between WLL/V5WLL and RPC but the length is 48 bits. This RP-ID is generated by the RP-ID of the air interface but is not the same as the RP-ID of the air interface. RPC can translate between the RP-ID of the WLL/V5WLL/RPC and the RP-ID of the air interface..*

E1 interface install setting

This item is used to configure E1 interface install setting (1), as described below:

	MSB							LSB
Bit	8	7	6	5	4	3	2	1
	0	0	0	0	X	X	X	X

Bit 1 corresponds to the installation status of E1-IF#1
Bit 2 corresponds to the installation status of E1-IF#2
Bit 3 corresponds to the installation status of E1-IF#3
Bit 4 corresponds to the installation status of E1-IF#4

Installation status: Installed → 1
Not installed → 0

Set "installed" or "not installed" for each E1-IF according to the E1-IF installation plan. Set "installed" for all E1-IF's for future expansion.

E1 interface install setting (2) is reserved for system expansion.

LCCH frequency (Control carrier frequency)

This item is used to set LCCH frequency of the system. The system can use one carrier from No. 1 to No. 77. This value is assigned by the operator or Government. For instance, if LCCH frequency is No.71, the setting value is 71 (HEX: 4D). In one-service area LCCH frequency and Operator ID must be the same for all RPs and RPCs.

Channel frequency use control (1-8), (9-16) ….. (73-77)

The item is used to set the availability of Traffic channels. Every channel frequency (carrier number 1 through 77) can be set "available" or "unavailable". For Channel frequency use control (1-8) the values are set as follows:

	MSB							LSB
Bit	8	7	6	5	4	3	2	1
	X	X	X	X	X	X	X	X

Bit 1 corresponds to Channel frequency No.1 (carrier No.1)
Bit 2 corresponds to Channel frequency No.2 (carrier No.2)
.....
Bit 7 corresponds to Channel frequency No. 7 (carrier No.7)
Bit 8 corresponds to Channel frequency No. 8 (carrier No.8)

Setting value: Available → 1
Unavailable → 0

For instance, if Channel frequency No. 1, 3, 5 are available and Channel frequency No. 2, 4, 6, 7, 8 are unavailable, the values are set as follows:

Channel frequency use control (1-8): 0001 0101(Binary) (HEX: 15)

Channel frequency use control (9-16) ….. (73-77) are set in the same way. The previous and the next Channel frequency of LCCH frequency must be set "Unavailable" for traffic channel to avoid the interference.

Loudness control value (input loudness value)

This item is used to set the RPC input loudness control value, as described below:

	MSB							LSB
Bit	8	7	6	5	4	3	2	1
	0	0	0	y	x	x	x	x

Bit 1-4 (xxxx) are the value of loudness, as listed below:

Real level		Bit 4 3 2 1
0 dB	→	0 0 0 0
2 dB	→	0 0 0 1
4 dB	→	0 0 1 0
6 dB	→	0 0 1 1

.....

Bit 5 is the value of sign.

Sign	Bit 5
	→ 1
	→ 0

.....

For instance, if the input loudness of RPC needs to be set to + 8 dB, the setting value is as follows:

0001 0100 (Binary)

This value is determined in accordance with the system level plan.

Loudness control value (output loudness value)

This item is used to set the RPC output loudness control value, as described below:

	MSB						LSB
Bit	8	7	6	5	4	3	2	1
	0	0	0	y	x	x	x	x

Bit 1-4 (xxxx) are the value of loudness, as listed below:

Real level		Bit 4	3	2	1
0 dB	→	0	0	0	0
2 dB	→	0	0	0	1
4 dB	→	0	0	1	0
6 dB	→	0	0	1	1

.....

Bit 5 is the value of sign.

Sign	Bit 5
	→ 1
	→ 0

.....

For instance, if the output loudness of RPC needs to be set to + 8 dB, the setting value is as follows:

0001 0100 (Binary)

This value is determined in accordance with the system level plan.

Loudness control value (DTMF signal loudness value)

In the case of PS origination, dialing information is transferred as a message from the PS to the RPC. The RPC generates the DTMF signal tone according to the received message. This item used for the setting of output DTMF signal loudness, as described below:

	MSB						LSB
Bit	8	7	6	5	4	3	2	1
	0	0	0	y	x	x	x	x

Bit 1-4 (xxxx) are the value of loudness, as listed below:

Real level		Bit 4 3 2 1
0 dB	→	0 0 0 0
2 dB	→	0 0 0 1
4 dB	→	0 0 1 0
6 dB	→	0 0 1 1

.....

Bit 5 is the value of sign.

Sign	Bit 5
	→ 1
	→ 0

.....

For instance, if the output loudness of RPC needs to be set to + 8 dB, the setting value is as follows:

0001 0100 (Binary)

This value is determined in accordance with the system level plan.

DTMF sound sending interval value

In the case of PS origination, dialing information is transferred as a message from the PS to the RPC. The RPC generates the DTMF signal tone according to the received message. This item is used for the setting of DTMF minimum pause of the DTMF signal. The value (unit: msec) is directly set in the value field.

For instance, if the sending interval time needs to be set to 80 msec, the setting value is "50" (HEX).

DTMF sound sending time value

In the case of PS origination, dialing information is transferred as a message from the PS to the RPC. The RPC generates the DTMF signal tone according to the received message. This item is used for the setting of DTMF sending time of the DTMF signal. The value (unit: msec) is directly set in the value field.

For instance, if the sending time needs to be set to 80 msec, the setting value is "50" (HEX).

Country number 1, 2

This item is used for the setting of Country Code. The Country code is used to represent the country which assigns the RP identification code.

System type

This item is used for the setting of system type. This system is applicable for the system. The system type is 3. The coding is "0000 0100" (Binary).

Standby zone selection level

This item is used for the setting of air-interface.

Standby zone hold level

This item is used for the setting of air-interface.

Recalling-type handover process level

This item is used for the setting of air-interface.

Recalling-type handover destination zone selection level

This item is used for the setting of air-interface.

Channel switching FER threshold value

This item is used for the setting of air-interface.

Reservation/Area information report status number

This item is used for the setting of air-interface.

TCH switching-type handover process level

This item is used for the setting of air-interface.

FSU mobility limitation

This item is used for the control of FSU mobility limitation. Depending on the setting value, one mode might be that RPC reports RP-ID to WLL/V5WLL for mobility, the other mode might be that RPC doesn't report RP-ID to WLL/V5WLL for mobility. In the case that RPC reports RP-ID to WLL/V5WLL, WLL/V5WLL controls FSU mobility in accordance with the subscriber setting. In the case that RPC doesn't report RP-ID, FSU mobility isn't limited regardless of the subscriber setting. The way of setting is as follows,

Bit	8	7	6	5	4	3	2	1	
	0	0	0	0	0	0	0	0	→ The mode that RPC doesn't report RP-ID
	0	0	0	0	0	0	0	1	→ The mode that RPC reports RP-ID

4.3.9 Change Data (RP Installation)

Use the procedure in this section to change the operation data for the selected RPC. The diagrams displayed in this section are very similar to those in the previous section. The only difference is that there are two configuration windows instead of three.

1. To change the operation data for an RPC, click the **Configuration** main menu and select the ***Service Data*** option, then the ***Change Data*** option, and then the ***RP Installation*** option. This opens the **RP Installation (Group Composition 1)** window, as displayed in the figure below.

☞ NOTE: *Before making any changes to the operation data, be sure to block the E1/IF and RP/IF. After the setting is modified, the RP/IF will restart itself.*

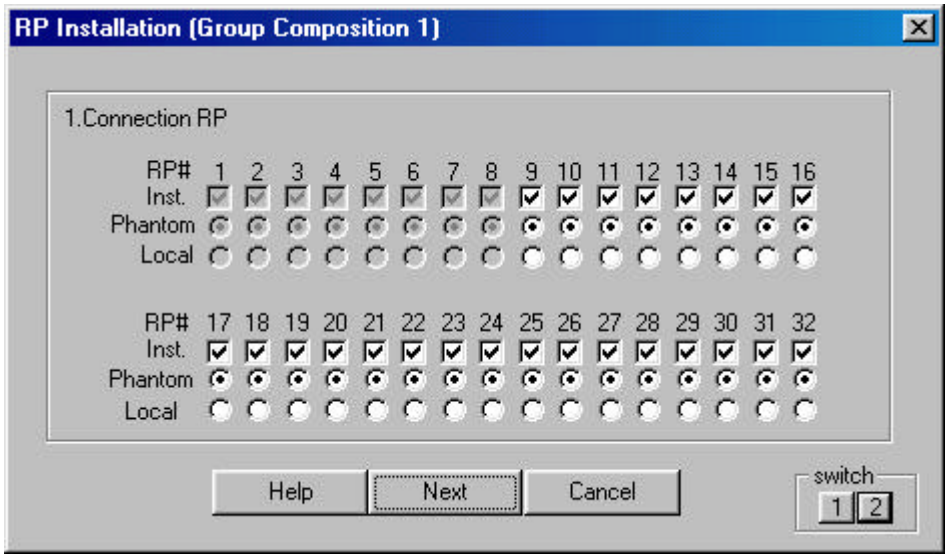


Figure 4-58: RP Installation (Group Composition 1) Window

2. This window is used to configure RP connection. For each installed RP, enter a √ in the Inst. row. For each installed RP, specify the power source by clicking on either the ***Phantom*** button or the ***Local*** button. Phantom means the power is supplied by the RPC. For WLL, the power source is Phantom.

3. To get to the **RP Installation (Group Composition 2)** window, click ***Next*** or ***Switch 2.*** The **RP Installation (Group Composition 2)** window is shown in the figure below.

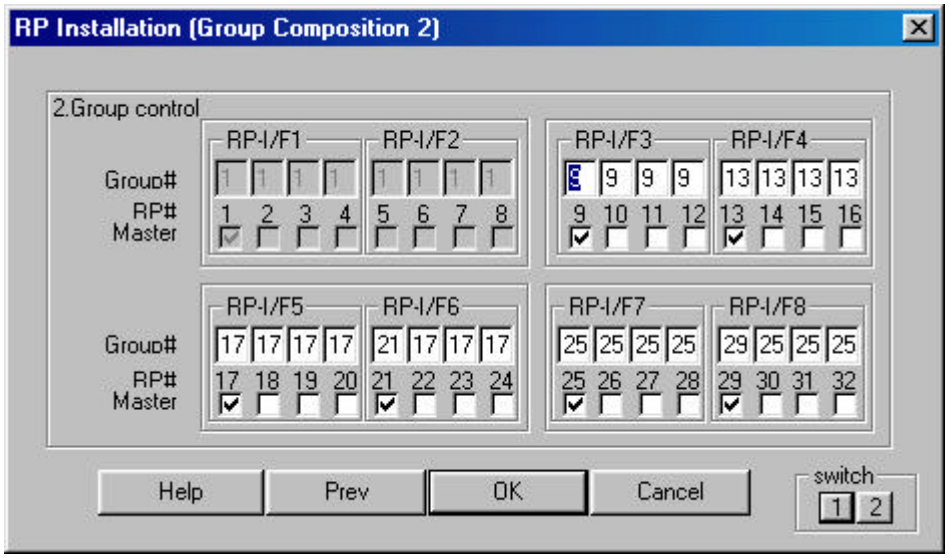


Figure 4-59: RP Installation (Group Composition 2) Window

4. This window is for the configuration of Group Control. Group Control maximizes the number of channels available for traffic by allowing one control channel to control up to 8 RPs (up to 31 traffic channels). Each group contains two RP Interface boards. Group members must be within the two RP Interface boards. For each RP, enter the group number and designate the master. In the above window, 7 RPs on RP Interface boards 5 and 6 are in group 17 with the master RP designated as RP number 17. The master RP must be the RP with the lowest RP number in the group. The RPs that are not in group control must be designated as their own masters and have their own group numbers, as is the case for RP# 21 in the above figure.

5. After editing the operation data click ***OK***. A dialog box opens for confirmation, as shown in the figure below.

Figure 4-60: Confirmation Dialog Box

6. Click ***Yes*** to confirm, or ***No*** to stop the transaction. If the **Version Confirmation** window opens when ***Yes*** button is clicked, verify that the version is correct and then click ***OK***.

4.3.10 Change Data (E1-IF Board Installation)

Each RPC can have 4 E1 interface boards to communicate with WLL/V5WLL. Use the steps in this section to select the target E1 interfaces to be installed or uninstalled.

1. First use the ***Blockade*** option under ***Unit Control*** to block the target E1 interfaces.

2. From the **Configuration** pull-down menu, select ***Service Data***, then ***Change Data***, and then ***E1-I/F Board Installation***. This opens the **E1-I/F Board Installation** window, as shown in the figure below.

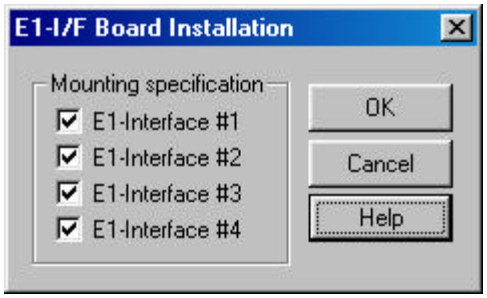


Figure 4-61: E1-IF Board Installation

3. Check or uncheck the boxes in front of the target E1 interfaces to be installed or uninstalled, and click ***OK***.

4.3.11 Change Data (Data Value)

Use this function to change the operation data value.

☞ NOTE: *This feature is not recommended. Use with care.*

1. From the **Configuration** main menu, click ***Service Data***, then ***Change Data***, and then ***Data Value***. The **Data Value Change** window opens, as illustrated in the figure below.

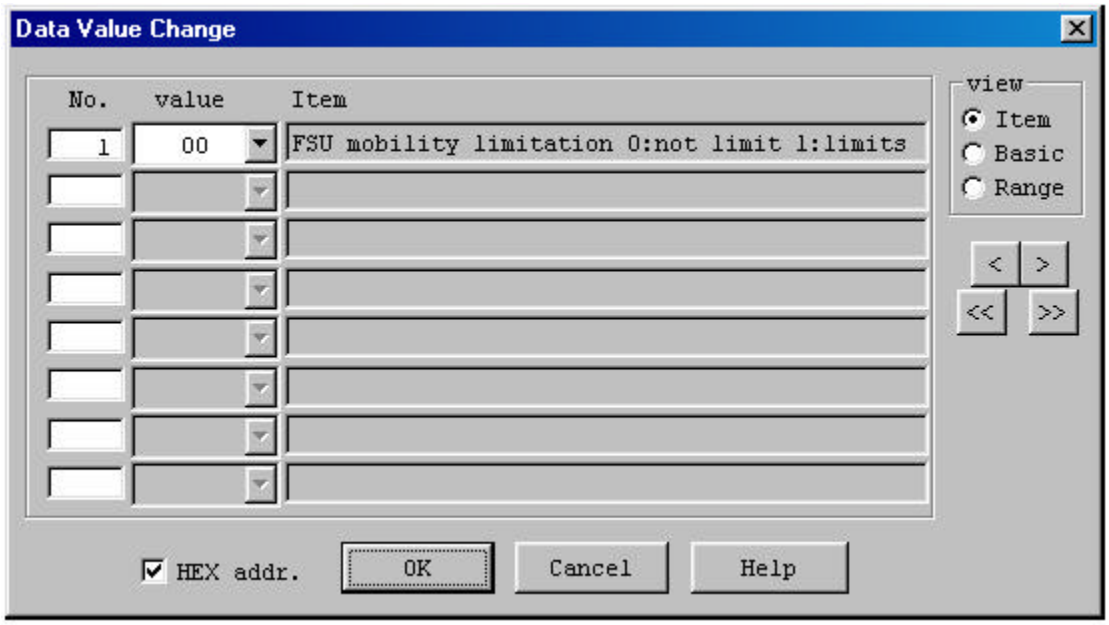


Figure 4-62: Data Value Change Window

Field Name	Definition
No.	Item sequence numbers, starting from 1
Value	Specified value for the item. The valid values are displayed in the **Item** block and can be selected from the arrow drop-down list.
Item	Item name and value description
Basic	Basic value
Unit	Item value unit
Min	The minimum value which can be specified for the item
Max	The maximum value which can be specified for the item
HEX addr.	Switch between hexadecimal and decimal value
Button Name	**Description**
Item	Only item names are displayed on the right column.
Basic	Basic value, unit value, and item names are displayed on the right column.
Range	Maximum value, minimum value, unit value, and item names are displayed on the right column.
<	Scroll the window downward one line at a time.
>	Scroll the window upward one line at a time.
<<	Scroll the window downward one page at a time.
>>	Scroll the window upward one page at a time.
OK	Implement the command.

Table 4-15: Data Value Change Window Field Description

2. There are three different windows for this function: **Item**, **Basic**, and **Range**. Use the **View** block to switch between different windows. Refer to *Section 4.3.8.3* for the detailed description for the **Value** field and the **Item** block.

3. Make necessary changes and click ***OK*** to close the window.

4.4 Manage RPC Alarms

This section discusses several aspects concerning the RPC warning and alarm history. Through the RPC device manager, we can update and clear the alarm, or save the alarm history to files for further analysis.

The warning messages are also displayed in the **Status View** windows for RPCs, RPs, and interfaces, as described in *Section 4.2.4*.

4.4.1 Warning Status

The RPC device manager can display currently occurring warnings about the RPC, RP, E1 interface, and RP interface.

1. On the **Main View** window, click the RPC R2.4 node. Get connected to the target RPC.

2. To view the RPC warnings, click the **Status** main menu, and select the ***Warning*** option. The **Warning** window appears, as displayed in the figure below. Another way to open the window is to click the ***Warning*** button.

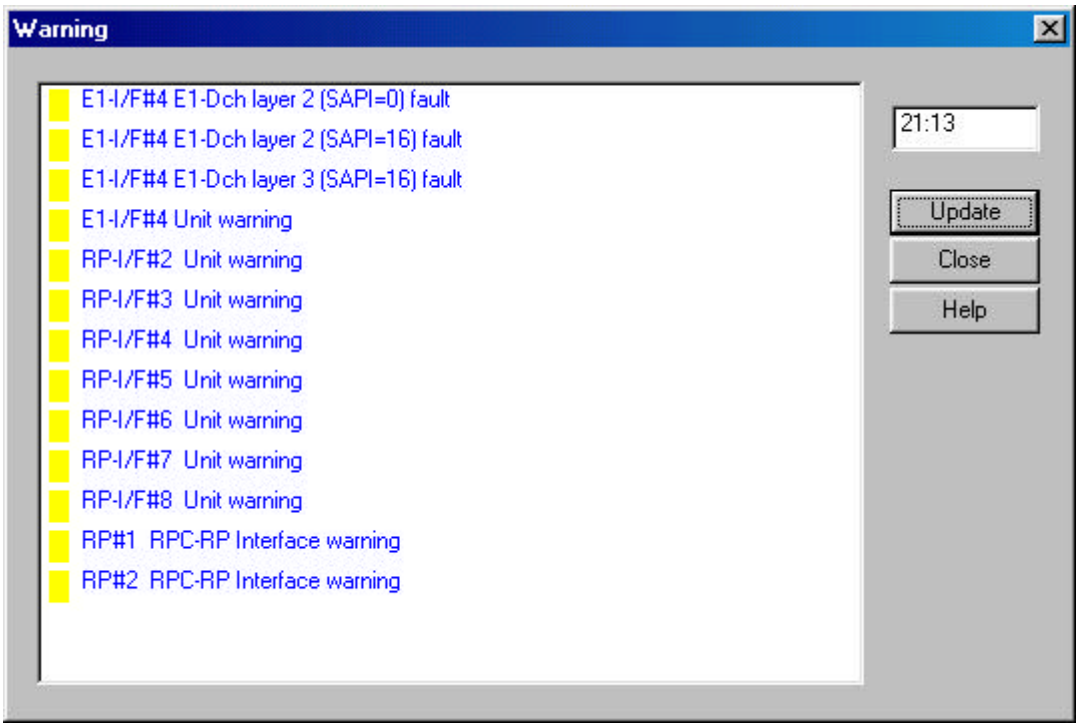


Figure 4-63: Warning Window

3. Click the ***Update*** button to retrieve the latest information. The color of the small rectangle in front of each warning message indicates the alarm's severity.

    - Red - Major Alarm
    - Yellow - Minor Alarm
    - Green - No Alarm

4. After viewing the warning, click ***Close*** to close the window.

4.4.2 Alarm History

The Alarm History option provides access to a chronological log of all the RPC, RP, interfaces, and synchronization warnings. This log may contain information useful in diagnosing equipment malfunctions.

1. To view the log of the Alarm History, select the ***Alarm History*** option from the **Status** main menu. The ***Alarm History*** window appears as shown in the figure below. Another way to open the window is to click the ***Fault History*** button.

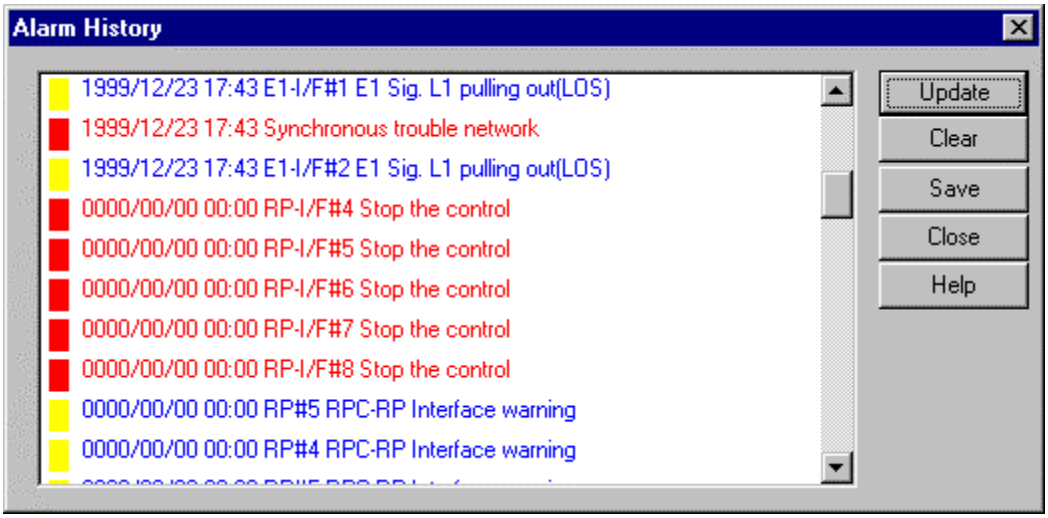


Figure 4-64: Alarm History Window

☞ NOTE: *This log has a capacity of storing 127 messages. When this limit is reached, the oldest message is deleted when the newest one is added.*

2. Click ***Update*** to display the historical information. To clear the present alarm history, click ***Clear***. The contents of this window can be saved to a file for further analysis. Click the ***Save*** button and specify a file name.

3. Click ***Close*** to close this window.

4.5 Reset RPC

When an RPC or its other components experience trouble and the problem cannot be solved, it may be necessary to reset the component. Use the following procedures to reset an E1 interface, an RP interface, an RP, or an RPC.

☞ **WARNING:** *Do not directly reset a unit in operation since this will cause active subscriber calls to be dropped. Before resetting a unit, block the unit temporarily by resorting to the* ***Configuration*** → ***Unit Control*** → ***Blockade*** *option. Check the* ***Channel Status*** *to verify that there are no active calls. Click the* ***Channel***

*button or click **Air Channel** on the **Unit View window** of the **RPC** window to open the **Channel Status View window**. After resetting, unblock the unit.*

1. On the **Main View** window, click the target RPC-DM node and connect to the RPC. This opens the **RPC** window.

2. Select the ***Reset*** option from the **Maintenance** pull-down menu or click the ***Reset*** button. The **Reset** window appears, as shown in the figure below.

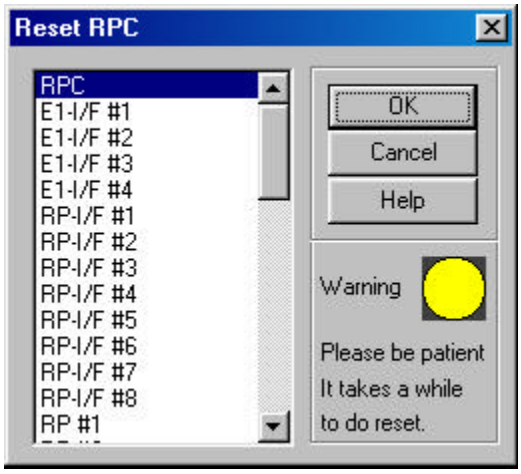


Figure 4-65: Reset RPC Window

3. Select either an RP, an E1 interface, an RP interface, or the entire RPC. Click ***OK.*** The system resets the unit, returns it to operation, and sends a message to the **Self Messages** window. Suppose that the RP#1 of the RPC#2 were reset, the window would be like the figure below.

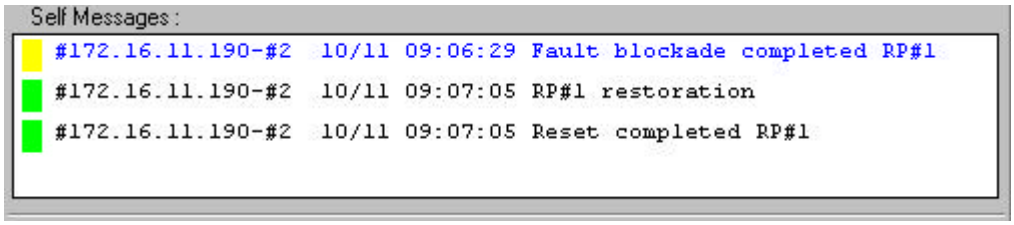


Figure 4-66: Self Messages Window for Reset

4. If an RPC needs to be reset, select the ***RPC*** and click ***OK***. This brings up the **EM Reset (RPC)** window as shown in the figure below.

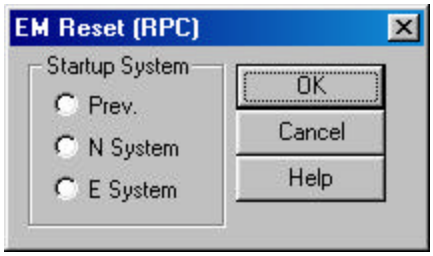


Figure 4-67: EM Reset (RPC) Window

Field Name	Description
Startup System	Determine which SDM to use for operating RPC after resetting.
Prev.	Previous ACT SDM. After resetting, RPC starts up and runs based on the previous ACT SDM.
N System	SDM-#N. After resetting, RPC starts up and runs based on SDM-#N.
E System	SDM-#E. After resetting, RPC starts up and runs based on SDM-#E.

Table 4-16: EM Reset (RPC) Window Field Description

☞ NOTE**:** *Refer to Section 4.3 for detailed description of the N and E systems.*

5. There are three options in the **Startup System** block. Select the system to start with and click ***OK.***

6. A confirmation window appears, as displayed in the figure below. Click ***OK*** to reset the RPC or ***Cancel*** to stop the transaction.

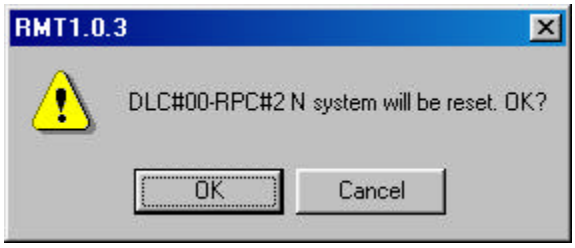


Figure 4-68: Reset Confirmation Window

7. After EM reset is complete, the PC will disconnect from the RPC. To resume normal operations, reconnect to the RPC.

8. Click the ***RPC Status*** button to open the **RPC Status View** window to verify that the component is in operation.

4.6 RPC Statistics

The function of RPC statistics can generate an RPC traffic report that displays the traffic status for either the entire period and all the RPCs and RPs, or the specific period and an individual RPC or RP. This is a useful feature for analyzing the RPC traffic. In addition, the RPC statistics can also create the RP status report.

4.6.1 RPC Traffic Report

1. To generate the RPC/RP traffic report, click the **Statistics** main menu on the **Client View** window and select ***RPC Statistics Report***. The criteria setting window opens, as shown in the figure below.

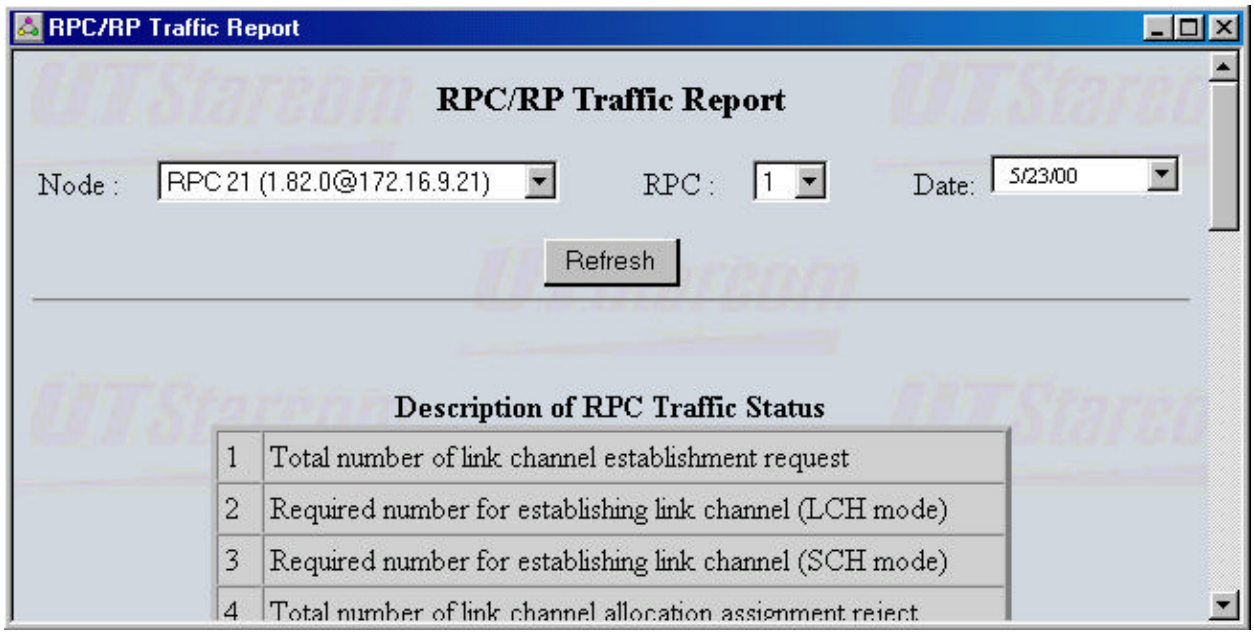


Figure 4-69: Criteria Setting Window

2. Select the criteria for the RPC traffic data to be retrieved and click the ***Refresh*** button. After a few seconds the **RPC/RP Traffic Report** appears on the screen, as illustrated in the figure below.

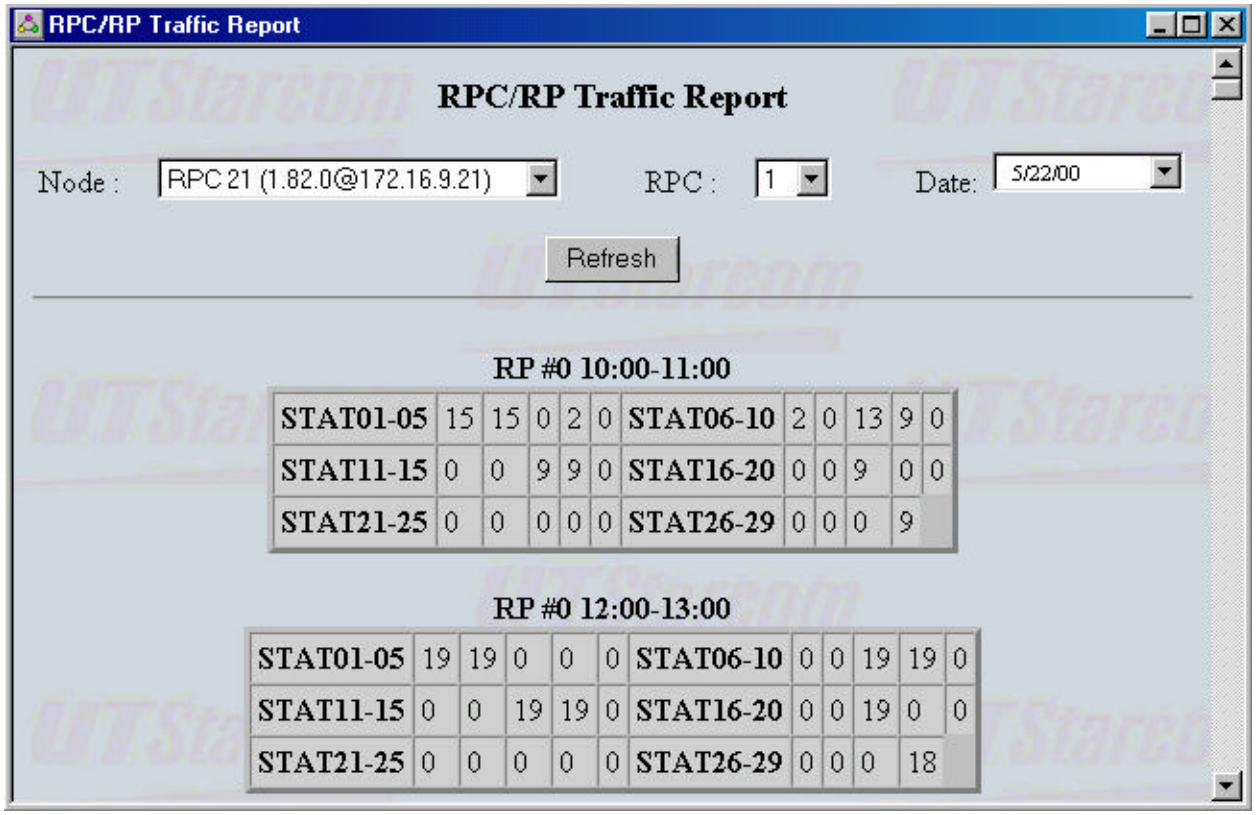


Figure 4-70: RPC/RP Traffic Report Window

☞ NOTE: *Sometimes nothing happens after the **Refresh** button is clicked. The reason is that the RPC board may have been reset by RTs and there is no synchronization between the RPC device manager and the RPC board. In that case go to the RPC **System View** window, click open the **Configure** main menu, and select **Set Time**. The **Set Time** window opens. Click **OK** to synchronize the RPC device manager with the RPC board. After the traffic data pile up in the board the RPC device manager can retrieve the traffic report. This rule also applies to the **RP Status Report** operation, as described in Section 4.6.3.*

3. Figure 4-70 presents the traffic report for each of the 32 associated RPs. The report is organized in such a way that each block displays all the 29 traffic statistics elements for an RP for the period of one hour. Refer to the following figure for the description of each of the 29 statistics elements.

1	Total number of link channel establishment request
2	Required number for establishing link channel (LCH mode)
3	Required number for establishing link channel (SCH mode)
4	Total number of link channel allocation assignment reject
5	Number of rejecting link channel allocation (No time slot)
6	Number of rejecting link channel allocation (No empty channel)
7	Number of rejecting link channel allocation (others)
8	Total number of link channel assigment
9	Total calling number from the station
10	General sending calling number
11	Sending calling number
12	Handing over calling number
13	Total calling number required for location registration
14	Total complete calling number from the stationt
15	General calling number of total complete sending
16	Calling number of sending complete
17	Calling number of complete handing over
18	Total complete calling number required for position regist
19	Total incomplete calling number from the station
20	Total calling number of RPC arrival
21	Total calling number of RPC arrival complete
22	Total calling number of RPC arrival incomplete
23	Required number for TCH switching (initiated by PS)
24	Required number for TCH switching (initiated by RP)
25	Number of TCH switching complete (initiated by PS)
26	Number of TCH switching complete (initiated by RP)
27	Number of TCH switching instruction (reaccess by PS)
28	Number of TCH switching instruction (reaccess by RP)
29	Circuit holding time

Figure 4-71: Description of RPC Traffic Status

4.6.2 RPC Outstanding Alarms

RPC Outstanding Alarms list all the alarms for each RPC which haven't been fixed.

1. To display the RPC outstanding alarms, click the **Statistics** main menu on the **Client View** window and select the ***RPC Outstanding Alarms*** option. This brings up the **RPC Outstanding Alarm** window, as shown in Figure 4-72.

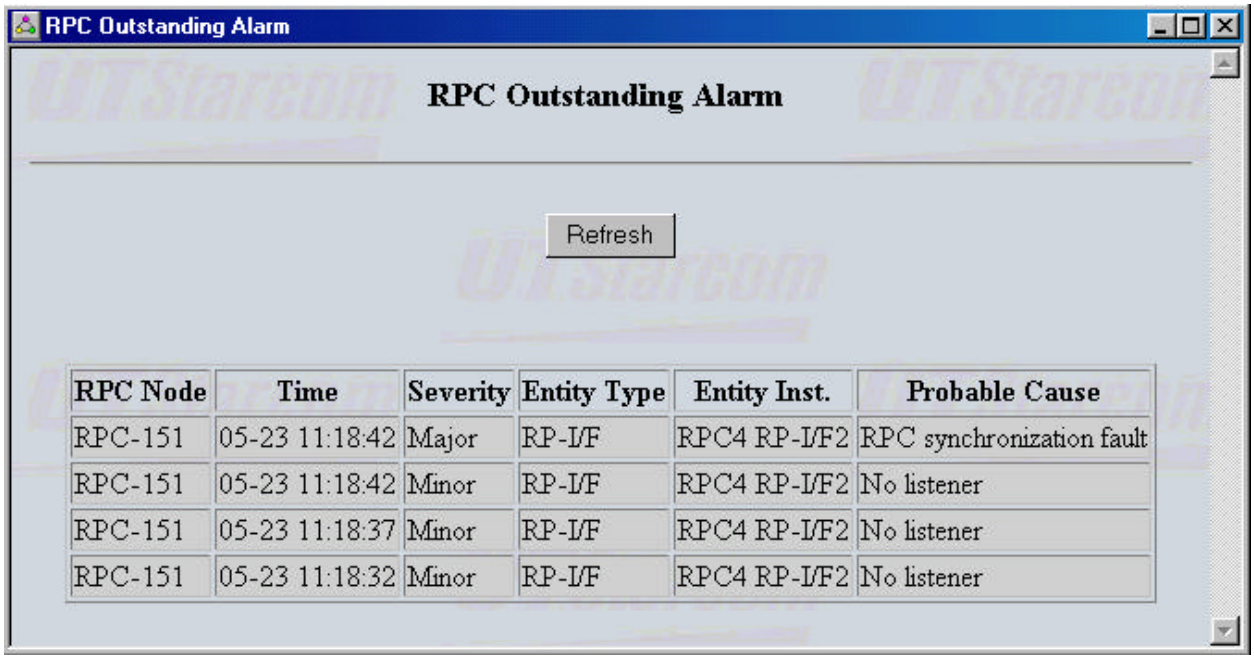


Figure 4-72: RPC Outstanding Alarm Window

2. Click the ***Refresh*** button to retrieve the current outstanding alarms.

4.6.3 RP Status Report

This feature displays the blockade and warning statuses for all the 32 RPs of the selected RPC.

1. To view the report, click the **Statistics** main menu and select the ***RP Status Report*** option on the **Client View** window. The **RP Status Report** page opens on the **Main View** window, as shown below.

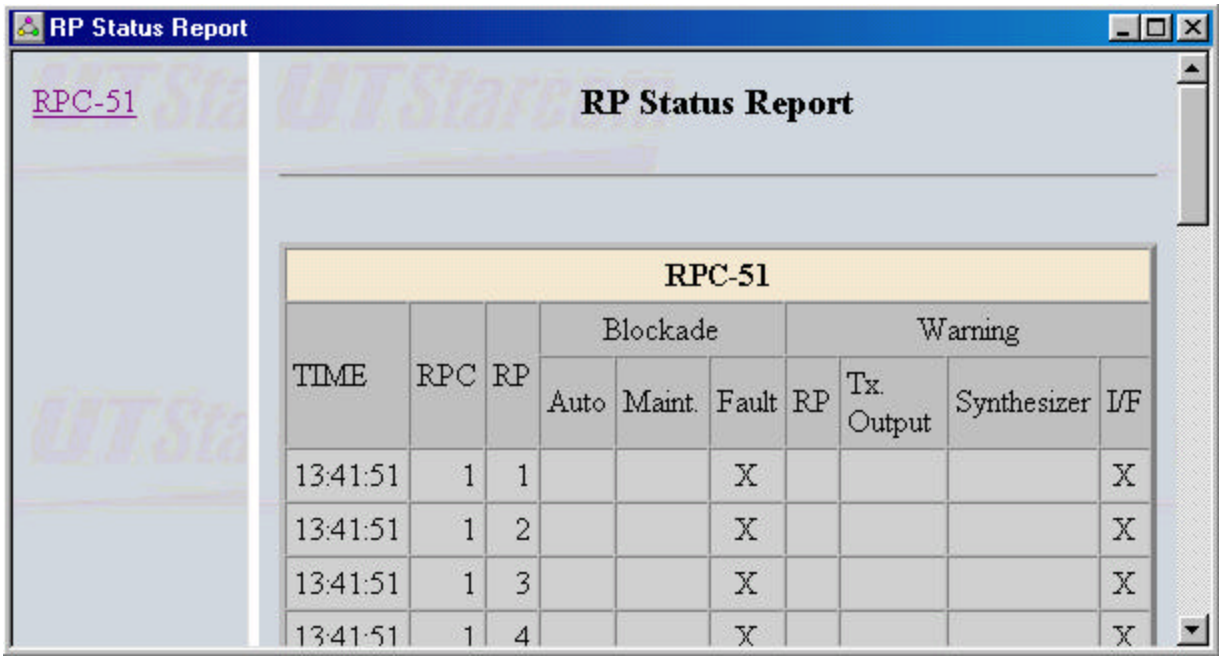


Figure 4-73: RP Status Report Page

2. Select the target RPC on the left frame to bring up the status report for the associated RPs.

Specifications

A

A.1 RPC Specifications

Item	Specifications
Functions	Control and power feeding to RPs Concentration of speech path Conversion of protocol
Capacity	
Max. number of controlled subscribers	960
Max. number of controlled RPs	32
Max. number of COT interfaces	4
Max. speech paths	120
COT Interface	
Physical Interface	E1 interface (30B+D) 2.048 Mbit/s (B: 64 kbit/s D: 64 kbit/s) TE mode ITU-T Rec. G.703, G.704
Speech coding rule	A-law
Logical Interface	Non-facility associated signaling Q.931
RP Interface	
Physical Interface	Proprietary (4B+D+K) 192 kbit/s (B: 32 kbit/s D: 16 kbit/s K: 8 kbit/s)
Speech coding rule	ADPCM
Line power feeding voltage	112-116 V DC
Logical Interface	Layer 2: TTC Rec. JT-Q921-b Layer 3: Proprietary
Power Condition	
Input voltage	42-58 V DC
Max. input current	Approx. 7.5 A
Operational Environment	
Temperature	-10° - +50° C
Humidity	Less than 95% (non-condensing)
Dimensions	640mm (H) x 494mm (W) x 210mm (D)

Table A-1: RPC Specifications

A.1.1 Champ Connector Pin Assignments

Assignment	Pin #	Pin #	Assignment	Remarks
RP # 1 (L1)	1	26	RP # 1 (L2)	RPIF Card #1
RP # 2 (L1)	2	27	RP # 2 (L2)	
RP # 3 (L1)	3	28	RP # 3 (L2)	
RP # 4 (L1)	4	29	RP # 4 (L2)	
RP # 5 (L1)	5	30	RP # 5 (L2)	RPIF Card #2
RP # 6 (L1)	6	31	RP # 6 (L2)	
RP # 7 (L1)	7	32	RP # 7 (L2)	
RP # 8 (L1)	8	33	RP # 8 (L2)	
RP # 9 (L1)	9	34	RP # 9 (L2)	RPIF Card #3
RP# 10 (L1)	10	35	RP # 10 (L2)	
RP# 11 (L1)	11	36	RP # 11 (L2)	
RP# 12 (L1)	12	37	RP # 12 (L2)	
RP# 13 (L1)	13	38	RP # 13 (L2)	RPIF Card #4
RP# 14 (L1)	14	39	RP # 14 (L2)	
RP# 15 (L1)	15	40	RP # 15 (L2)	
RP# 16 (L1)	16	41	RP # 16 (L2)	
Not in use	17	42	Not in use	No need to attach
Not in use	18	43	Not in use	
Not in use	19	44	Not in use	
Not in use	20	45	Not in use	
Not in use	21	46	Not in use	
Not in use	22	47	Not in use	
Not in use	23	48	Not in use	
Not in use	24	49	Not in use	
Not in use	25	50	Not in use	

Table A-2: Champ Connector 1-Pin Assignments

The Pin numbers are marked on the Champ connector. This chart applies to J16 on the motherboard in the RPC. RP has no polarity.

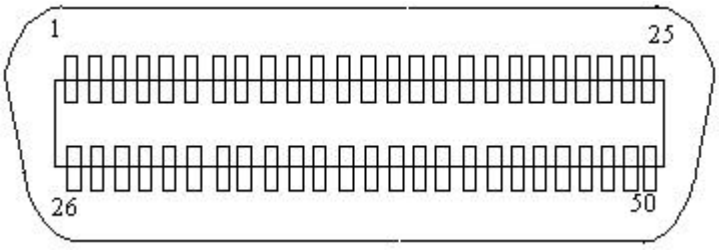


Figure A-1: Champ Connector Contact Face View

Assignment	Pin #	Pin #	Assignment	Remarks
RP # 17 (L1)	1	26	RP # 17 (L2)	RPIF Card #5
RP # 18 (L1)	2	27	RP # 18 (L2)	
RP # 19(L1)	3	28	RP # 19 (L2)	
RP # 20(L1)	4	29	RP # 20 (L2)	
RP # 21(L1)	5	30	RP # 21 (L2)	RPIF Card #6
RP # 22(L1)	6	31	RP # 22 (L2)	
RP # 23(L1)	7	32	RP # 23 (L2)	
RP # 24(L1)	8	33	RP # 24 (L2)	
RP # 25(L1)	9	34	RP # 25 (L2)	RPIF Card #7
RP# 26 (L1)	10	35	RP # 26 (L2)	
RP# 27(L1)	11	36	RP # 27 (L2)	
RP# 28(L1)	12	37	RP # 28 (L2)	
RP# 29(L1)	13	38	RP # 29 (L2)	RPIF Card #8
RP# 30(L1)	14	39	RP # 30 (L2)	
RP# 31(L1)	15	40	RP # 31 (L2)	
RP# 32(L1)	16	41	RP # 32 (L2)	
Not in use	17	42	Not in use	No need to attach
Not in use	18	43	Not in use	
Not in use	19	44	Not in use	
Not in use	20	45	Not in use	
Not in use	21	46	Not in use	
Not in use	22	47	Not in use	
Not in use	23	48	Not in use	
Not in use	24	49	Not in use	
Not in use	25	50	Not in use	

Table A-3: Champ Connector 2 - Pin Assignment

Pin numbers are marked on the Champ connector. This chart applies to J17 on the motherboard in the RPC. RP has no polarity.

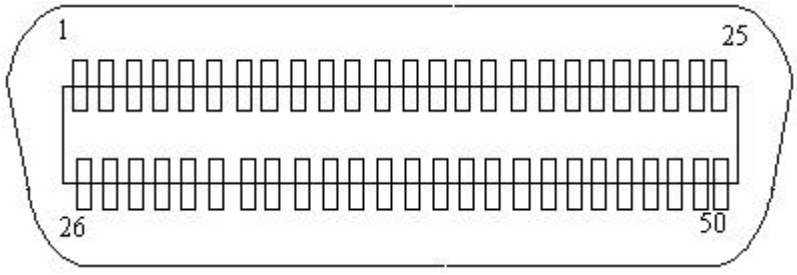


Figure A-2: Champ Connector Contact Face View

A.2 RP Specifications

A.2.1 Radio Features

Item	Contents
Radio frequency	For private use: 1,895-1,906.1 MHz For public use: 1,895-1,910 MHz
Carrier spacing	300 KHz
Output power	10 mW
Radio access	TDMA-TDD
Number of TDMA slots	4 (for full rate CODEC)
Modulation	π/4 shift QPSK (roll-off factor = 0.5)
Transmission bit rate	384 kbps
Speech coding	32 kbps ADPCM

Table A-4: Radio Features

A.2.2 Outdoor Type RP

Item	Specifications
RF output power average (Peak)	10 mW (80 mW)
Sensitivity (Static BER = 1%)	14 dB μV
Antenna (Diversity)	2 external antennae (2 branch)
Diversity	
RX (uplink)	Antenna selection diversity (frame by frame)
TX (downlink)	Transmitter antenna selection diversity (2 branch)
Air interface	Based on RCR STD-28 ver.2
RPC interface	Proprietary BRI equivalent (4B+D+K) x 1
Speech coding rate	32 kbps (ADPCM) x 3 or 4
Maximum wire line length (⇔ RPC)	3.5 km (ϕ 0.4) 5.0 km (ϕ 0.5)
Maximum power consumption	Approx. 3 W
Power source	Line power feeding (phantom) from RPC 56 - 116 V DC
Operational Environment	
Temperature	-10° to + 50°C
Humidity	Less than 95 % (non-condensing)
Size	260 x 215 x 100 mm
Weight	Approx. 2 kg
Line connection	Screw less terminal
Antenna connection	TNC connector
Battery backup	None

Table A-5: Outdoor RP Specifications

A.2.2.1 Antenna

The recommended antenna specifications for the outdoor type RP are shown in Table A-6.

Items:	Recommended Specifications
Type	Co-Liner antenna (Omni-directional) 2 branch
Gain	7dBi
Impedance	50Ω
VSWR	less than 1.5
Cable	Length: within 1m Attenuation: 0.5dB/m

Table A-6: Antenna Specifications - Outdoor Type RP

A.2.3 Indoor Type RP

Item	Specifications
RF output power average (Peak)	10 mW (80 mW)
Sensitivity (Static BER = 1%)	14 dB μV
Antenna (Diversity)	Built-in antenna (2 branch 2.4 dBi)
Diversity	
RX (uplink)	Antenna selection diversity (frame by frame)
TX (downlink)	Transmitter antenna selection diversity (2 branch)
Air interface	Based on RCR STD-28 ver.2
RPC interface	Proprietary BRI equivalent (4B+D+K) x 1
Speech cording rate	32 kbps (ADPCM) x 3 or 4
Maximum wire line length (⇔ RPC)	km (ϕ 0.4) 5.0 km (ϕ 0.5)
Maximum power consumption	Approx. 3 W
Power source	Line power feeding (phantom) from RPC 56 - 116 V DC
Operational Environment	
Temperature	0° C to +50° C
Humidity	Less than 95 % (non-condensing)
Size	154(H) x 142(W) x 47(D) mm
Weight	Approx. 0.6 kg
Line connection	Modular connector
Battery backup	None

Table A-7: Indoor RP Specifications

Glossary

B

ADPCM	Adaptive Differential Pulse Code Modulation
BRI	Basic Rate Interface
CNT	Control Module
COT	Central Office Terminal
CPU	Central Processing Unit
CRC	Cyclic Redundancy Check
E1IF	E1 Interface
ECNT	Enhanced Control Module
FIFO	First In - First Out
HDLC	High speed Digital Loop Carrier
HDSL	High speed Digital Subscriber Loop
ISDN	Integrated Services Digital Network
ITU	International Telecommunications Union
LE	Local Exchange
LED	Light Emitting Diode
LIF	Line Interface
OA&M	Operations, Administration and Maintenance
PC	Personal Computer

PCM	Pulse Code Modulation
PHS	Personal Handyphone System
RAM	Random Access Memory
ROM	Read Only Memory
RP	Radio Port
RPC	Radio Port Controller
RPIF	Radio Port Interface
TIF	Trunk Interface

Editor's Note

C

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