LARS NET™
Long-Range Radio Alarm System

RAN-MAN™

Signal-Strength Measuring Utility
Program for RM4000™ and RM4001™

KP S E C U R I T Y

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User Manual

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KP ELECTRONIC SYSTEM PRODUCTS IN THIS MANUAL

SMR3300™, Smart Data Radio Repeater (*see SMR3300 FA™ User Manual*)

RM4000 and **RM4001**, Signal-Strength Measuring Modules (*see RM4000 and RM4001 User Manuals*)

Setup

RAN-MAN™ requires the following minimum PC system configuration:

Component	Requirement	Recommendation
Operating System	Microsoft Windows® 95	Microsoft Windows® 98
Processor	Pentium 100	Pentium 233
Video adapter	>=256 colors	
Free hard disk space	32 MB	64 MB
Monitor	VGA	Super VGA
CD-ROM drive		

Installation Procedure

The setup wizard automatically creates a RAN-MAN default directory and a program group icon.

To Install RAN-MAN:

1. Insert the **RAN-MAN** CD into the CD drive.

2. The setup wizard automatically installs the program.

If the program is not activated automatically, then:

1. From the **Start** menu, click **Run**.

2. From the **CD**, click **Setup**.

Note:

- If installing from **Windows 95**, prior to installing the program, the **Dcom95.exe** file has to be installed (it can be found on the CD), and then install the **Mdac_typ.exe** file.
- Even if there are problems with the **Windows 98** or **Windows 2000** operating system after installation, you must install the **Mdac_typ.exe** file from the installation CD.
- **Important: After installation, restart the computer!**

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1   Introduction

RAN-MAN is a signal-strength measuring
utility program. It processes and displays the
signal-strength of RF messages graphically
on the PC screen.

In real time, the program receives messages
that contain the transmitter's address, the
number of the sub-system, and the strength
level via the signal-strength measuring
modules: RM4000™ and RM4001™.

RAN-MAN displays statistical data of the signals in the form of reports and
graphs. The reports are built according to month and represent information
according to various parameters that the user configures.

The program works on a PC connected to a device that measures signal-strength
via RM4000™ or RM4001™ modules. After the graphic display of the signal-
strength level, the data is stored automatically in a basic data file.

There are two ways to print data:

- Direct printing from the measuring device at the time of the signal.
- Printing reports from the program according to the user's requirements.

2   Physical Description

The RAN-MAN utility program runs on a PC connected to RM4000™ or
RM4001™ Signal-Strength Measuring Modules. When RM4000 or RM4001
measures the signal-strength level of a test message received, it is displayed
together with its station address and sub-system address.

3 Starting RAN-MAN

The program is activated automatically with the operating system. If the program screen appears, then perform the following steps:

- To activate the program, click **Start**➢**Programs**➢**KP Utilities**➢**RAN-MAN**.
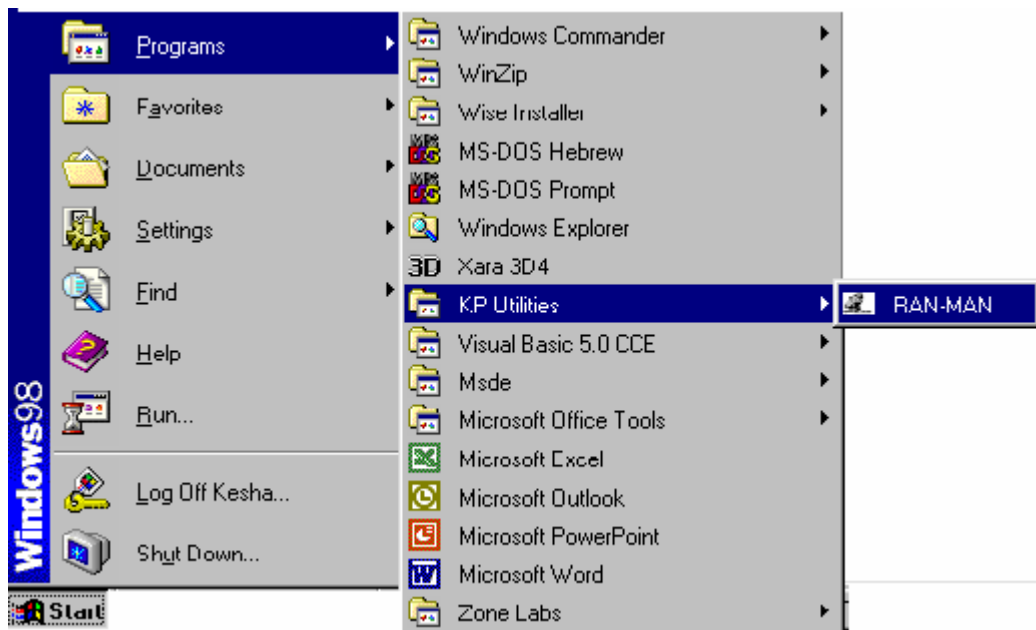

Figure 1: Activating RAN-MAN

4 Software Description

The main window contains two rows, each containing eight bars, where the signal's strength level is displayed (see Figure 2). Each bar represents a different transmitter or control station, which receives signals from a certain number of transmitters and stations. Each bar has a name that can be changed (see 4.1.2.4 Aliases), for example the first bar is titled **Rep0** (**Rep** plus a number or letter is the default name). The strength level is represented together with the number of the transmitter. New signals always replace the old signals.
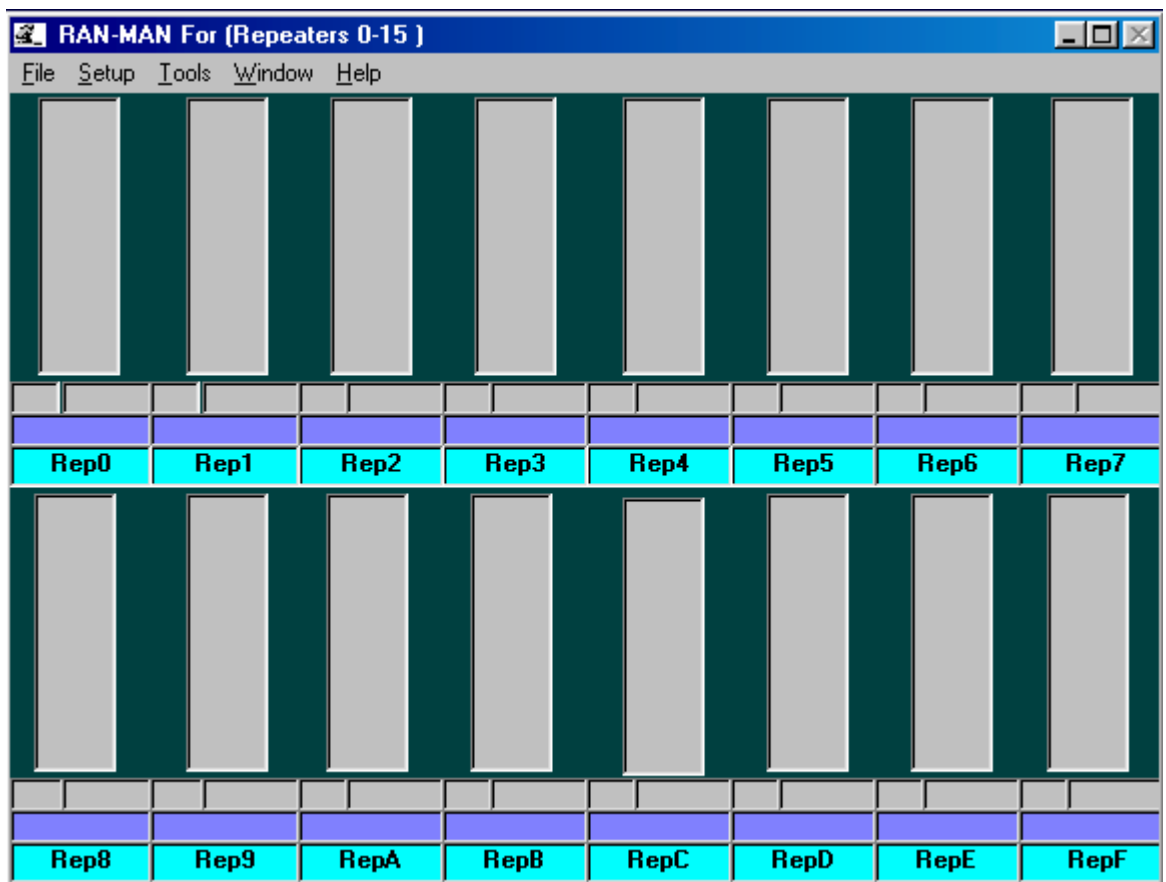
Figure 2: Main Screen

In RAN-MAN messages can be received from 32 transmitters. To add up to 16 additional transmitters, there is another screen, which is similar to the former screen, which receives messages from transmitters represented by numbers 16 to 31 (see Figure 3).

Figure 3: Second Screen

4.1   Graphic User Interface (GUI)

There are four menus:

- File
- Setup
- Tools
- Window
- Help

4.1.1   File

The File menu contains four options:

- Demo: Program demonstration.
- Stop Demo: Stops the program demonstration.
- Exit: Exits the program.

4.1.2   Setup

The Setup menu contains three options (see Figure 4):

- Default Port Settings
- Port Settings
- Protocol

- Aliases
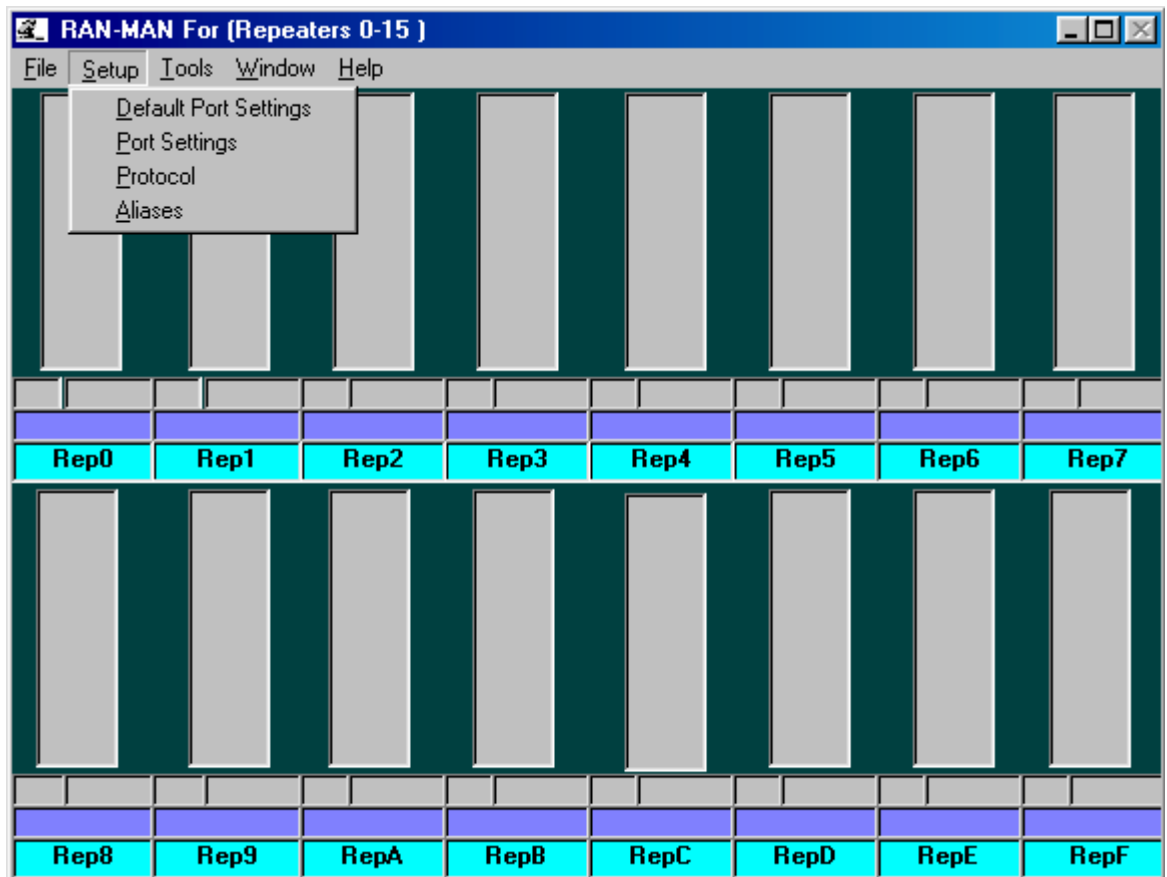
Figure 4: Setup Menu

4.1.2.1 Default Port Settings

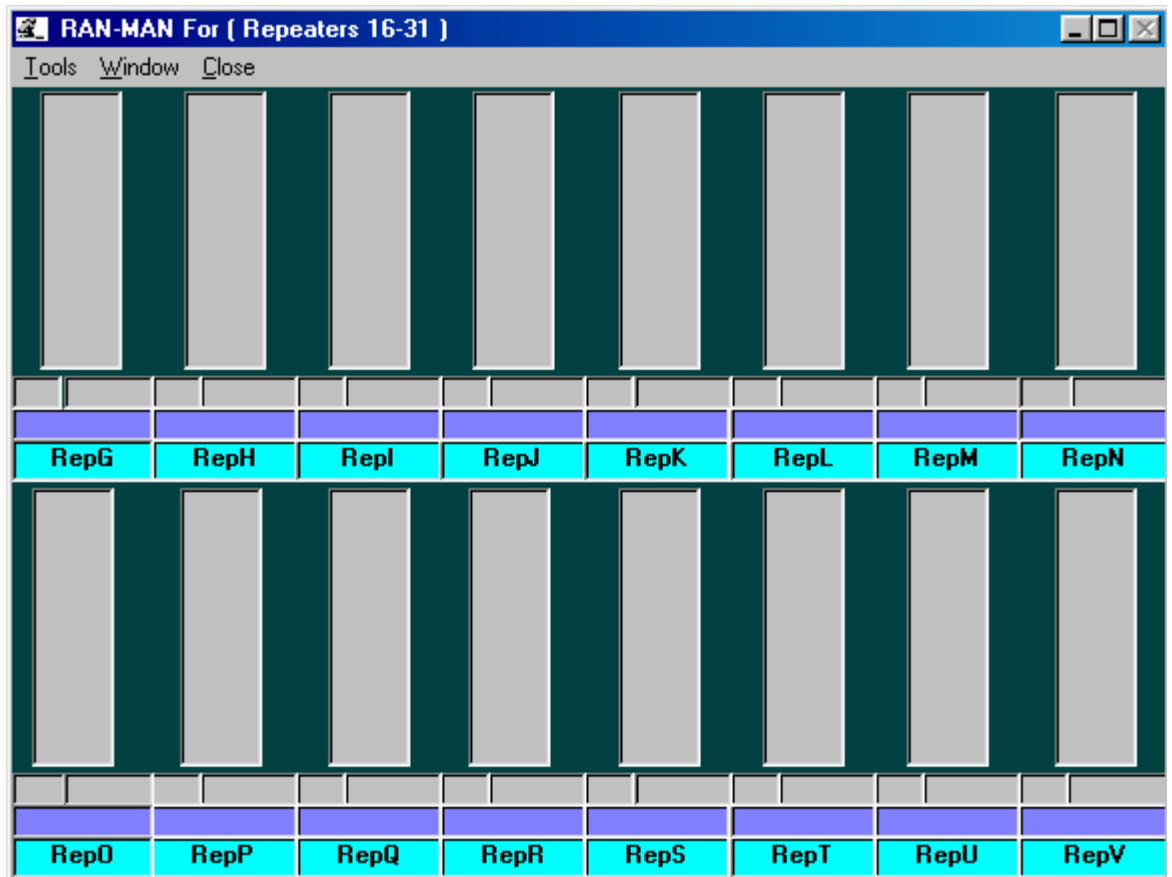The following are the default settings for the COM port.

Item	Default Setting
COM port	COM 1
Baud Rate (Max. speed)	4800 Baud
Data Bits	7 Bits
Parity	ODD
Stop Bits	1 Bit

4.1.2.2 Port Settings

Type or choose the following parameters for bar ports (see Figure 5):

- Port: The automation communication port of the PC.
- Maximum Speed: The communication speed of the Baud speed.
- Parity
- Data Bits
- Stop Bits
- Flow Control
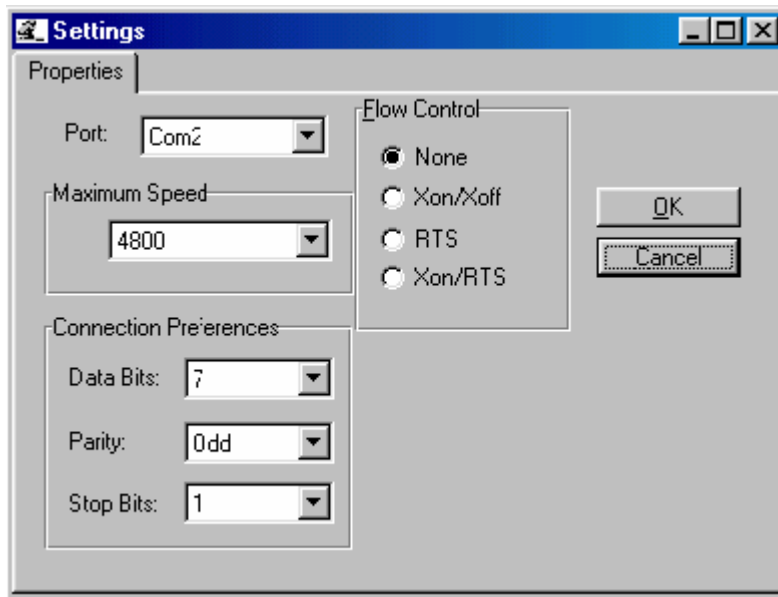
Figure 5: Port Settings

4.1.2.3   Protocol

The data format for any given system should be selected during setup. The data format can be either *LARS I* or *LARS* depending on the radio protocol format used.

To Choose the Data Format Received and Displayed:

1. From the **Select Protocol** menu, click **LARS I** or **LARS**

2. Choose one of the following:

   -To **Save** the new configuration, click **OK**.

   OR
   -To **Cancel** the change and return to the RAN-MAN main screen, click **Cancel.**
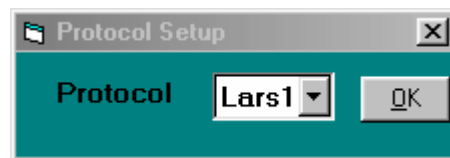
Figure 6: Protocol

4.1.2.4   Aliases

The name of the transmitter is composed of the name **Rep** and a number or letter. The names appear on the main screen (see Figure 2). The names are alphanumeric and can be changed as required. If the name doesn't fit into the text box, try moving the mouse to the text area.

4.1.2.4.1   Changing the Transmitter Name

To Change the Transmitter Name:

1. From the Setup menu, click Aliases. The Setup Receivers Alias dialog box appears (see Figure 7).

Figure 7: Aliases

2. Either choose a repeater name from the list, or do one of the following:

- To change a repeater name, type a name in the text box, and then click **OK**.

- To exit from the dialog box without making any changes, click **Cancel**.

After a repeater name is changed, the changed name displays on the main screen.

To reinstate a repeater's default name:

• 1. Open the Setup Receivers Alias dialog box, click **OK** (without making any changes), and then click **Cancel**.

4.1.3 Tools

4.1.3.1 Reports

The Report menu is comprised of four reports and one graph:

- Accounts Per Central
- System Average Levels
- Standard Deviations
- Below Level Transmitters
- Individual Transmitter (graph)
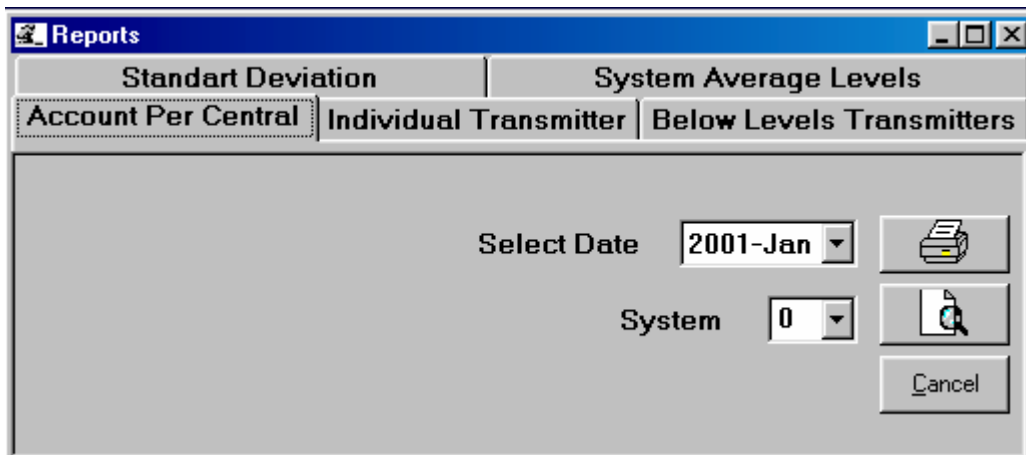
Figure 8: Reports

4.1.3.1.1 Accounts Per Central

The command Accounts Per Central generates a report of all of the transmitters that transmitted according to a specific month and year (see Figure 9). All of the transmitters are arranged according to their sub-system. The sub-systems are numbered from 0 to 16.

Figure 9: Accounts Per Central

To generate a report, follow the steps below:

1. Choose a month, year, from the **Select Date** list, and choose system from **System** list.

2. Choose one of the following:
   - To **view** the report selected, click **Print Preview**.

- To **print** the report without prior viewing, click
  Print.
- To **exit** without generating a report, click **Cancel**.

4.1.3.1.2   System Average Levels

The command System Average Levels generates a report showing the average
signal-strength level for every repeater, according to sub-system and transmitter
address. This report is generated according to a specific month and year (see
Figure 10). All of the transmitters function according to their own sub-system.
The sub-systems are numbered from 0 to 16.

Figure 10: System Average Levels

To generate a report, follow the steps below:

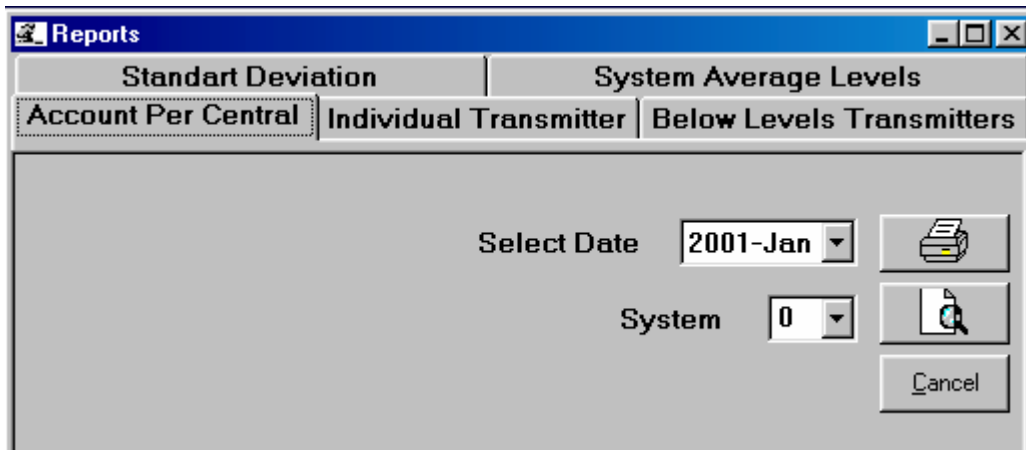1. To generate a report for repeaters numbered 0 to 15, choose a month, year, from
   the **Select Date** list, and choose system from **System** list as required, and click
   the **0 - 15 Repeaters** option.

2. To generate a report for repeaters numbered 16 to 31, choose a month, year,
   from the **Select Date** list, and choose system from **System** list as required, and
   click the **16 - 32 Repeaters** option.

3. Choose one of the following:
   - To **view** the report selected, click **Print Preview**.
   - To **print** the report without prior viewing, click
     Print.
   - To **exit** without generating a report, click **Cancel**.

4.1.3.1.3   Standard Deviations

The command Standard Deviations generates a report showing the deviation of
the average signal-strength level for each repeater, according to sub-system and
transmitter address. This report is generated according to a specific month and
year (see Figure 11). All of the transmitters function according to their own sub-
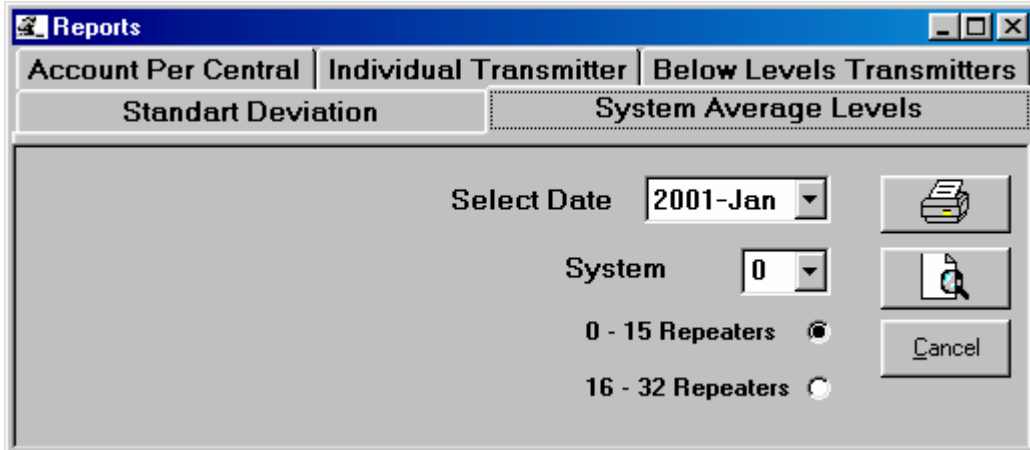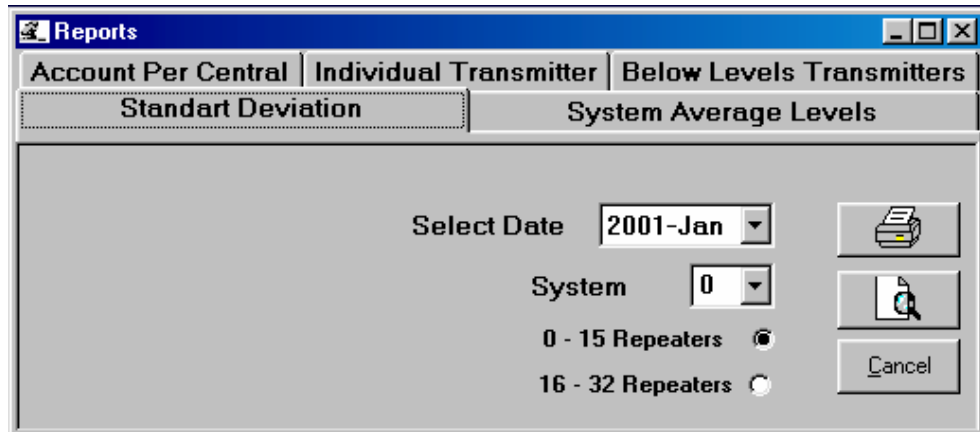system. The sub-systems are numbered from 0 to 16.

Figure 11: Standard Deviations

To generate a report, follow the steps below:

1. To generate a report for repeaters numbered 0 to 15, choose a month, year from the **Select Date** list, and choose system from **System** list as required, and click the **0 - 15 Repeaters** option.

2. To generate a report for repeaters numbered 16 to 31, choose a month, year from the **Select Date** list, and choose system from **System** list, as required, and click the **16 - 32 Repeaters** option.

3. Choose one of the following:
   - To **view** the report selected, click **Print Preview**.
   - To **print** the report without prior viewing, click **Print**.
   - To **exit** without generating a report, click **Cancel**.

4.1.3.1.4   Below Level Transmitters

The command Below Level Transmitters generates a report of every transmitter according to two criteria:

- Threshold signal level (transmitters with signal-strength level less than the level configured).
  - That is the minimum number of the repeaters through which they must pass a message to the transmitter. If the number of the repeater is less than the minimum number, then the event is listed in the report. Two is the recommended minimum number with which to configure the repeaters, however any other number will also be accepted.

- Minimum number of repeaters (transmitters not transmitting through the number of repeaters configured).
  - That is the lowest signal-strength level. If the signal-strength level falls below the configured signal-strength level, then an event is listed in the report.

All of the transmitters function according to their own sub-system. The sub-systems are numbered from 0 to 16. The report is built according to a specific month and year.
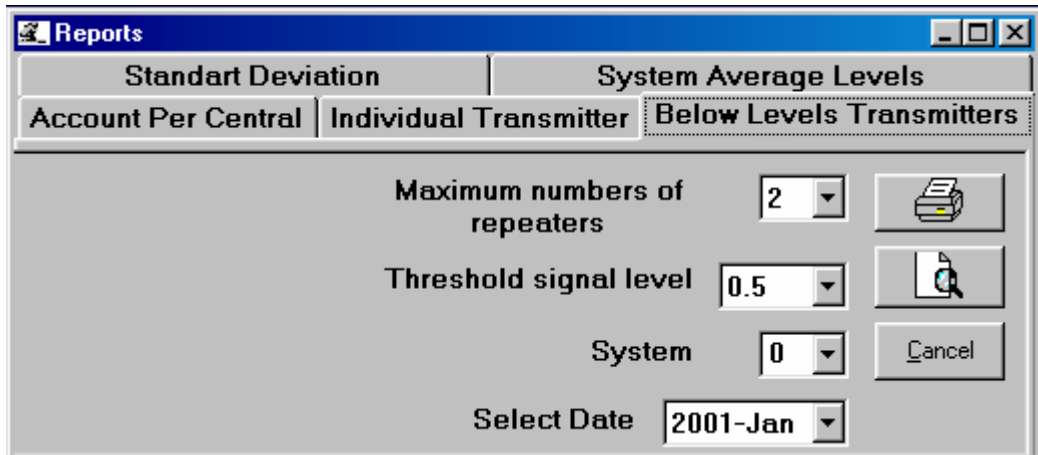
Figure 12: Below Level Transmitters

To generate a report, follow the steps below:

1. Choose a month, year, from the **Select Date** list, and choose system from **System** list.

2. Choose a Maximum numbers of repeaters from the **Maximum numbers of repeaters** list, and choose Threshold signal level from **Threshold signal level** list.

3. Choose one of the following:
   - To **view** the report selected, click **Print Preview**.
   - To **print** the report without prior viewing, click **Print**.
   - To **exit** without generating a report, click **Cancel**.

4.1.3.1.5 Individual Transmitter (graph)

The Individual Transmitter command generates a graph of the average signal-strength level of a specific transmitter in the subsystem, as received by the repeaters in the network, for a specific month and year.
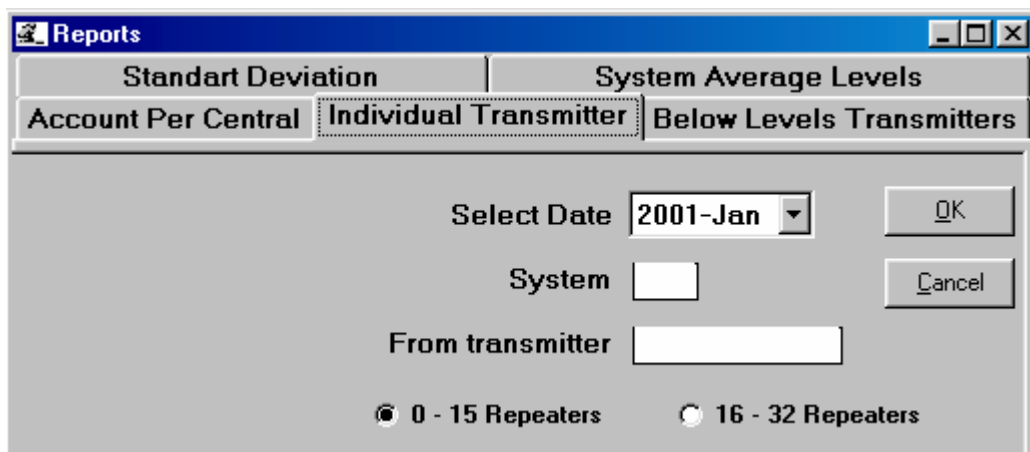
Figure 13: Individual Transmitter

To Generate a Graph of Individual Transmitters (see Figure 12)**:**

- To generate a graph of repeaters from 0 to 15, click the **0 – 15 Repeaters** option.

- To generate a graph of repeaters from 16 to 32, click the **16 – 32 Repeaters** option.
- Type the transmitter sub-system in the **System** text box (from 0 – 16)
- Type the transmitter address in the **From Transmitter** text box (the transmitter address depending on the system appearing in the Protocol box).
  - If **Lars1** appears in the Protocol box, then the address range is **0000-8191**.
  - If **Lars** appears in the Protocol box, then the address range is **000A-777H**.

Following each step, choose the required month and year from the list, and then click **OK**. To **exit** without generating a report, click **Cancel**.

4.1.3.2   Clear Screen

The Clear Screen menu is composed of one command: Clear Screen. The Clear command clears the entire main screen including the graphic display. This command is used for test purposes. In addition, data can be cleared, as needed, to free disc space.

To clear any data currently displayed on the RAN-MAN main screen:

- From the **Display** menu, click **Clear** <ALT+C>.

4.1.3.3   Clear Data

The Clear Data command clears the entire main screen including the graph. This command is used for test purposes. The main screen can be cleared as needed by checking the required repeater checkbox and designating the required date (see Figure 14).
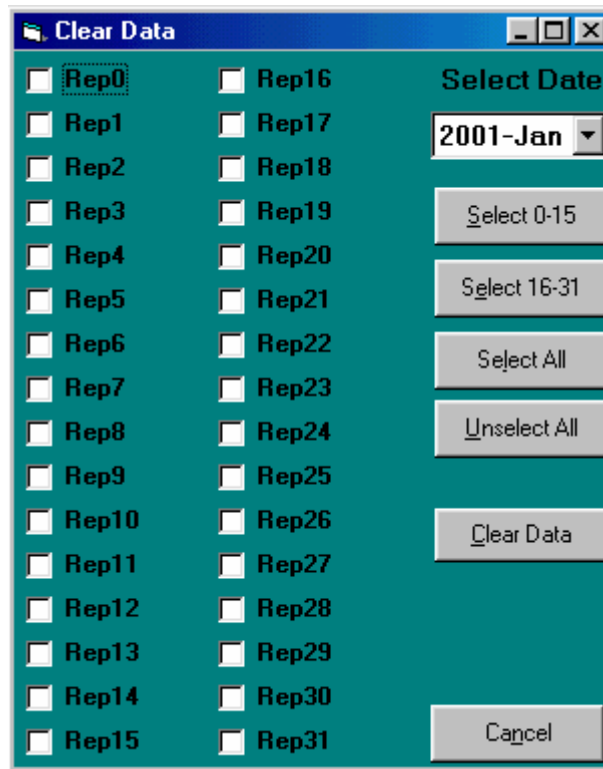
Figure 14: Clear Data

4.1.4   Window

The Window menu is composed of one command: 16 - 31 Repeaters. In the 16 – 31 Repeaters is used to open a window, which is similar to the main screen, but it represents repeaters from 16 to 31.

On the second screen the following menus are displayed (see Fig. 3)

- Tools
- Window
- Close

4.1.4.1   Tools

The Tools command is composed of one command: Clear

4.1.4.2   Window

The Window command reverts back to the main screen.

4.1.4.3   Close

The close menu closes the window.

5   Shortcut Keys

Use the shortcut keys listed below to open RAN-MAN menus:

Menu	Key
File	**\<Alt+F\>**
Setup	**\<Alt+S\>**
Tools	**\<Alt+T\>**
Window	**\<Alt+W\>**
Close	**\<Alt+C\>**
Exit	**\<Alt+X\>**

The shortcut keys listed below perform the following functions:

Key	Function
\<ENTER\>	Confirms the command selected.
\<TAB\>	Toggles between text boxes in a dialog box.
\<ESC\>	Exits and returns to the RAN-MAN main screen.
\<CANCEL\>	Cancels any selection.

6   Report Examples

6.1   Accounts Per Central

Accounts Per Central

Period: Oct   2000   System :   2

Transmitters   Address

```
1012 . 1028 ,1048 . 1064 . 1067 . 1075 . 1088 . 1098 . 1112 . 1130 . 1132 . 1171 . 1191 . 1192 . 1198 . 1204 .1207
1212 . 1219 ,1222 . 1234 . 1251 . 1265 . 1278 . 1290 . 1314 . 1316 . 1326 . 1331 . 1336 . 1338 . 1347 . 1363 .1382
1391 . 1400 ,1420 . 1424 . 1455 . 1473 . 1474 . 1483 . 1508 . 1511 . 1515 . 1521 . 1564 . 1574 . 1578 . 1591 .1621
1627 . 1635 ,1651 . 1652 . 1654 . 1669 . 1684 . 1685 . 1698 . 1724 . 1729 . 1751 . 1767 . 1773 . 1775 . 1777 .1779
1798 . 1799 ,1809 . 1820 . 1823 . 1830 . 1836 . 1841 . 1842 . 1847 . 1900 . 1919 . 1923 . 1929 . 1935 . 1950 .1966
1977 . 1996 ,2006 . 2033 . 2037 . 2040 . 2047 . 2055 . 2066 . 2075 . 2082 . 2103 . 2107 . 2110 . 2125 . 2126 .2137
2152 . 2155 ,2163 . 2187 . 2233 . 2240 . 2257 . 2259 . 2263 . 2267 . 2297 . 2323 . 2327 . 2329 . 2359 . 2393 .2425
2432 . 2438 ,2458 . 2461 . 2468 . 2484 . 2501 . 2515 . 2521 . 2528 . 2564 . 2569 . 2572 . 2598 . 2601 . 2610 .2618
2619 . 2624 ,2627 . 2643 . 2651 . 2655 . 2664 . 2668 . 2673 . 2687 . 2702 . 2766 . 2767 . 2786 . 2799 . 2801 .2804
2805 . 2806 . 2812 . 2814 . 2826 . 2832 . 2861 . 2874 . 2879 . 2882 . 2886 . 2893 . 2917 . 2925 . 2935 . 2939 .2945
2956 . 2957 . 2958 . 2960 . 2970 . 2995 . 3011 . 3023 . 3035 . 3041 . 3065 . 3085 . 3089 . 3111 . 3114 . 3124 .3136
3143 . 3153 ,3164 . 3171 . 3176 . 3185 . 3189 . 3202 . 3223 . 3244 . 3247 . 3254 . 3263 . 3266 . 3287 . 3302 .3312
3317 . 3323 ,3327 . 3328 . 3331 . 3335 . 3363 . 3380 . 3382 . 3389 . 3401 . 3403 . 3411 . 3425 . 3431 . 3439 .3454
3515 . 3536 ,3538 . 3540 . 3541 . 3551 . 3616 . 3623 . 3626 . 3652 . 3658 . 3709 . 3719 . 3725 . 3734 . 3746 .3762
```

6.2   System Average Levels

Average Signal Reception Level – By System/Repeater

Period: Oct 2000 System: 2

Account	Rep0	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	RepA	RepB	RepC	RepD	RepE	RepF
1012							1.4									
1028									0.7							
1048			0.8													
1064										1.1						
1067												1.6				
1075												1.3				
1088													1.3			
1098													1.9			
1112											0.8					
1130															1.3	
1132											2					
1171									2							
1191		1.3														
1192				1.8												
1198									1.8			1.4				
1204								1.5								
1207			1.9													
1212				1.2												
1219											2					

6.3 Standard Deviations

System Standard Deviations

Period: Oct 2000 System: 2

Account	Rep0	Rep1	Rep2	Rep3	Rep4	Rep5	Rep6	Rep7	Rep8	Rep9	RepA	RepB	RepC	RepD	RepE	RepF
2458								0								
4884			0													
6779													0			
2702				0												
7600						0										
2103						0										
6112													0			
7742							0									
5678													0			
7701											0					
7047														0		
7336															0	
5078												0				
4712														0		
6338																0

6.4 Below Level Transmitters

Transmitters Signal Below Level

Threshold Signal Level :   1.6   μV

Transmitters have been received through less then :   2   repeaters

Period: Oct   2000   System :   2

Transmitters   Address

1012 . 1028 ,1048 . 1064 . 1067 . 1075 . 1088 . 1112 . 1130 . 1191 . 1198 . 1204 . 1212 . 1222 . 1234 . 1278 .1290
1314 . 1316 ,1331 . 1336 . 1338 . 1347 . 1391 . 1400 . 1420 . 1420 . 1424 . 1455 . 1508 . 1511 . 1564 . 1621 .1627
1651 . 1652 ,1684 . 1685 . 1685 . 1698 . 1724 . 1767 . 1773 . 1775 . 1777 . 1799 . 1809 . 1823 . 1830 . 1830 .1836
1842 . 1847 ,1919 . 1923 . 1929 . 1977 . 2006 . 2047 . 2055 . 2066 . 2075 . 2082 . 2103 . 2107 . 2110 . 2126 .2137
2152 . 2155 ,2163 . 2187 . 2233 . 2259 . 2267 . 2323 . 2327 . 2329 . 2359 . 2393 . 2425 . 2432 . 2438 . 2458 .2461
2468 . 2484 ,2501 . 2521 . 2564 . 2572 . 2598 . 2610 . 2619 . 2624 . 2627 . 2643 . 2651 . 2655 . 2664 . 2668 .2673
2687 . 2702 ,2766 . 2786 . 2799 . 2801 . 2804 . 2805 . 2806 . 2814 . 2826 . 2832 . 2832 . 2861 . 2874 . 2874 .2879
2882 . 2886 ,2893 . 2917 . 2925 . 2935 . 2945 . 2956 . 2958 . 2960 . 2970 . 2995 . 2995 . 3023 . 3041 . 3041 .3065
3089 . 3111 ,3114 . 3124 . 3143 . 3153 . 3164 . 3171 . 3176 . 3202 . 3223 . 3244 . 3247 . 3266 . 3287 . 3302 .3312
3317 . 3323 ,3327 . 3331 . 3335 . 3363 . 3389 . 3401 . 3403 . 3411 . 3431 . 3439 . 3454 . 3515 . 3536 . 3541 .3551
3616 . 3623 . 3626 . 3652 . 3658 . 3709 . 3719 . 3725 . 3734 . 3746 . 3762 . 3784 . 3785 . 3789 . 3794 . 3797 .3806

6.5   Individual Transmitter (Graph)

Individual Transmitter Chart for :   5 - 6017   Period :   Nov   2000