Chapter 4: µLink Management System

General Information

The µLink Management Information System is a software tool for the management (installation, maintenance and support) of µLink digital radio links.

The software runs on an IBM compatible PC running Windows 95 (user supplied), connected to the Indoor Unit (IU) via a serial communications interface.

It provides extensive management functions on site and, via the microwave radio link, can be used to access any µLink station within a link domain.

Hardware (supplied by Customer)

The hardware may be supplied by the customer. It is typically a laptop or notebook computer, and must have the following minimum characteristics:
- IBM PC compatible.
- 486 processor, 25 MHz clock speed.
- 16 Mbyte RAM
- 120 Mbyte hard drive with Windows 95 installed.
- 1.44 Mbyte stiffy drive.
- Mouse or other pointing device.
- 1 x RS-232 serial port (Com port). This is in addition to the Com port that may be used by the mouse.
- SVGA monitor (minimum screen resolution of 640 x 480).

Software and Hardware (supplied by Tellumat)

The software is the operator interface to the operation and control of the µLink System. It allows you to perform tasks such as: system configuration, controlling system parameters and accessing on-line help.

It is supplied by Tellumat on one 1.44 Mbyte, 3.5 inch stiffy diskette. It is supplied as executable code, supported with installation and other supplementary files.

In addition to the software, Tellumat also supplies an RS232 interconnection cable for use between the IU and the PC interface. Refer to Appendix A at the end of Chapter 2 in this manual for pin details of this cable interface (Monitor connector).

Setting-up

Follow these steps to set up the µLink Management Information System for use with the µLink:

Step	Action
1.	Connect the supplied interface cable between the RS-232 port on the rear of the computer, to the Monitor connector on the front panel of the Indoor Unit.
2.	Switch the computer On.
3.	Run the Windows operating system.
4.	Insert the application Software disk into the appropriate disk drive (A or B).
5.	In Windows 95, access the Control Panel and select the Add/Remove Programs. From the Install/Uninstall folder, select the Install button.

Step	Action
6.	Insert the installation disk of the software into the relevant drive (A or B) of the PC and then select **Next**. Run ***Setup. exe** by selecting **Finish** (* being the drive identifier).
7.	Follow the screen prompts to install the software onto the hard drive of the computer.

Accessing the Software Program

After installing the software, open the program by selecting the µLink option from the Program Group in the Start Menu.

Menu Structure

The µLink Management Information Software is a menu driven program that provides you with a graphical interface of the µLink Station or Network. This interface allows you to select various options to configure, manage and interrogate the µLink System.

After accessing the software program, the Main Screen is displayed (see Figure 12).

Pull-down Menus Area (label pointing to menu)

Network Display Area (label pointing to table)

uLINK MANAGEMENT INFORMATION SYSTEM

Node	Site	Status	Bit	Ou	Remote
Station1	Local	Online		Online	Online
Station2	Remote	Online		Online	Online

Short-cut Buttons Area (label pointing to buttons)
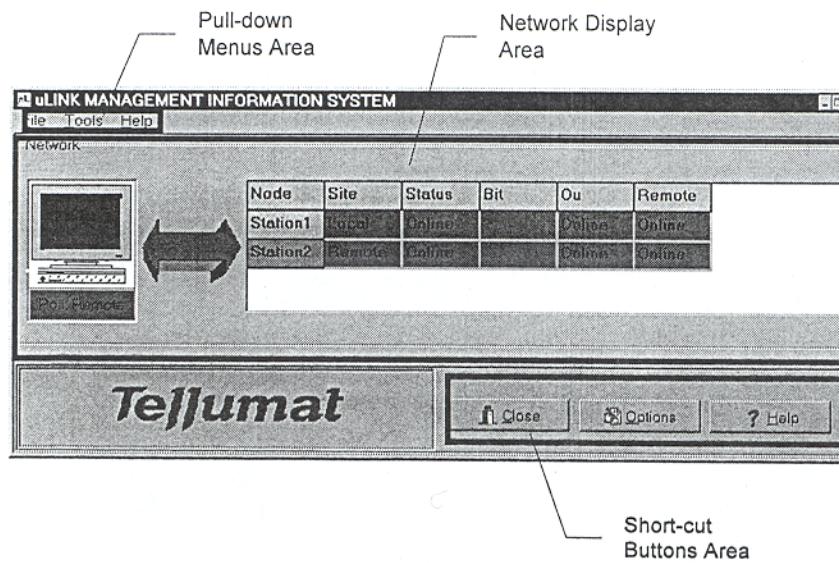
Figure 12. μLink Management Software: Typical Main Screen.

Main Screen

The Main Screen has the following three main functional areas:

- Pull-down Menus Area (see page 47)
- Short-cut Buttons Area (see page 47)
- Network Display Area (see page 48)

Pull-down Menus Area

The following pull-down menus are available from the Main Screen:

File. This menu provides you with an exit option, which allows you to exit from the μLink Management Software.

Tools. This menu provides the following options:

- **Options.** This option allows you to select the μLink Management Software terminal serial port. You can select No Port, COM1, COM2, COM3 or COM4. You can also set the polling cycle (in seconds) which determines how often information is updated.
- **Local IU/Remote IU.** These options allows you to view the details of the selected site.

Help. This menu provides you with various help facilities.

Short-cut Buttons Area

The following short-cut buttons are provided:

Close. Allows you to exit from the μLink Management Information System.

Options. As for Tools/Options (see *Pull-down Menus Area*).

Help. As for Help/About (see *Pull-down Menus Area*).

Network Display Area

The Network Display Area of the Main Screen shows all the microwave links in the domain in tabular format.

It provides the local and remote site station names and shows you the site to which the μLink Management Software is connected.

To view the details of a particular site, simply click on the required site. The Station Control screen for the selected site is displayed (see Figure 13).
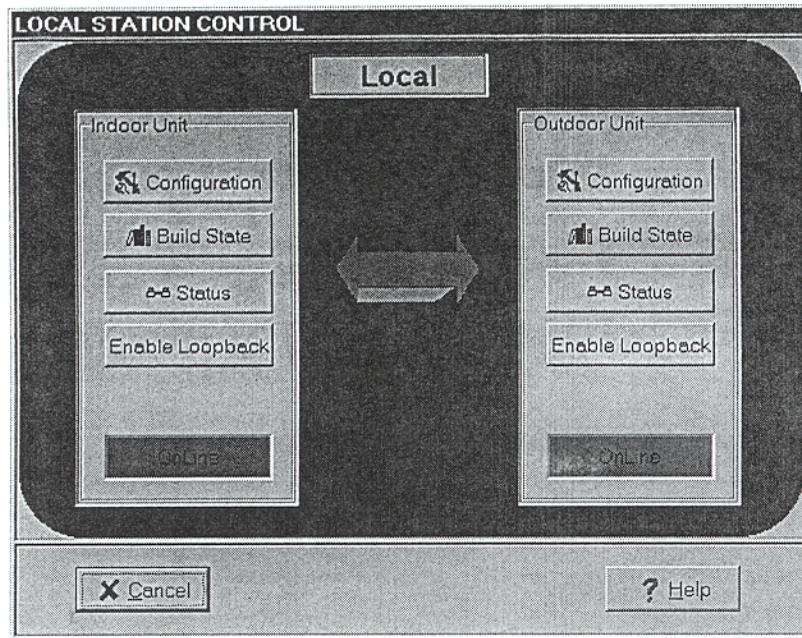

Figure 13. Typical Station Control Screen.

Station Control Screen

See Figure 13. This screen allows you access to the following parameters:

a. Indoor Unit
   - Configuration
   - Build State
   - Status
   - Enable Loopback (Payload Data)

b. Outdoor Unit
   - Configuration
   - Build State
   - Status
   - Enable Loopback (RF)

Also provided on the screen are status indicators for both the IU and OU. These blocks are bi-coloured and indicate whether the unit is Online (Green) or Offline (Red).

**Indoor Unit:
Configuration**

This screen allows you to configure the following items (see Figure 14):
- Wayside Port
- Payload Data Interface Port
- Bit Error Rate Thresholds

To configure the ports, click on the required parameter(s).

Configure the BER thresholds as required. Payload is from the user equipment to the IU Payload Data connector and RF Link is from Antenna to Antenna. Note that the thresholds must be entered in scientific notation, eg. 1.0E-6. If the Minor or Major thresholds are exceeded, it will trigger a Service Alarm fault. If the Critical threshold is exceeded, it will trigger a Fail alarm. When finished, click on the relevant <Send> button. This transmits the parameters to the selected IU.

**Indoor Unit:
Build State**

This screen (see Figure 15) allows you to view the build state details of the primary hardware and software components of the IU. This information is read from the IU microprocessor.

Figure 15. Indoor Unit: Typical Build State Screen.

Figure 14. Indoor Unit: Typical E1 Configuration Screen.

Indoor Unit:
Status

This screen (see Figure 16) allows you to monitor the network's performance. It provides the following data:

- Status of the Near and Far site **Fail**, **Site** and **Service** alarms.
- Status of the **Rx Sync**, **Tx Sync**, **LOS** and **AIS** alarm LEDs.
- **Payload** error counts for **Code Violation, CRC4, FAS, Instantaneous BER and Maximised BER**.
- **RF** error counts for **Total Blocks, CRC Count, Instantaneous BER and Maximised BER**.

If you want to clear the LEDs, simply click on the <Clear LEDs> button.

If you want to clear the Error Counts, simply click on the <Clear Counts> button.

You can see more details of the **Fail**, **Site** and **Service** alarms by clicking on the respective highlit button. This initiates the selected site IU Detailed alarm screens (see Figure 17, Figure 18 or Figure 19 respectively).
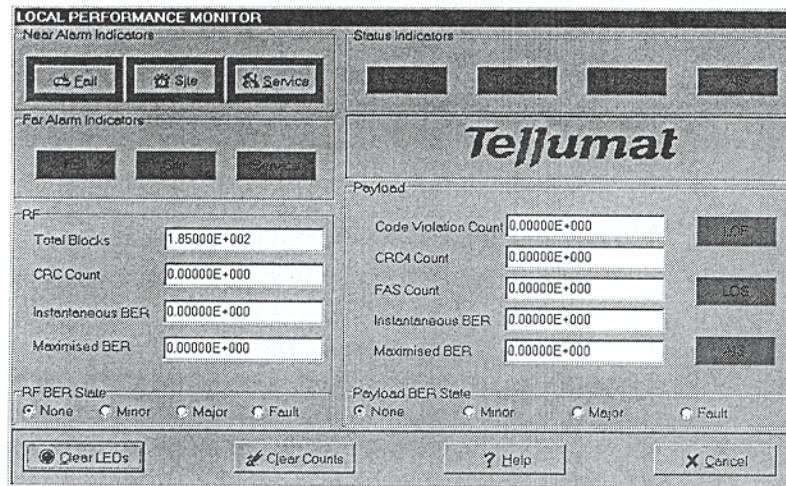
Figure 16. Indoor Unit: Typical Status Screen.

Indoor Unit:
Failure Alarm
Details

This screen (see Figure 17) provides more detailed information of the Near and Far site **Fail** alarms.

The specific cause of the error is shown by a tick in the adjacent check box of the suspected error.

Refer to Chapter 5 of this manual to fault-find the failure alarm.
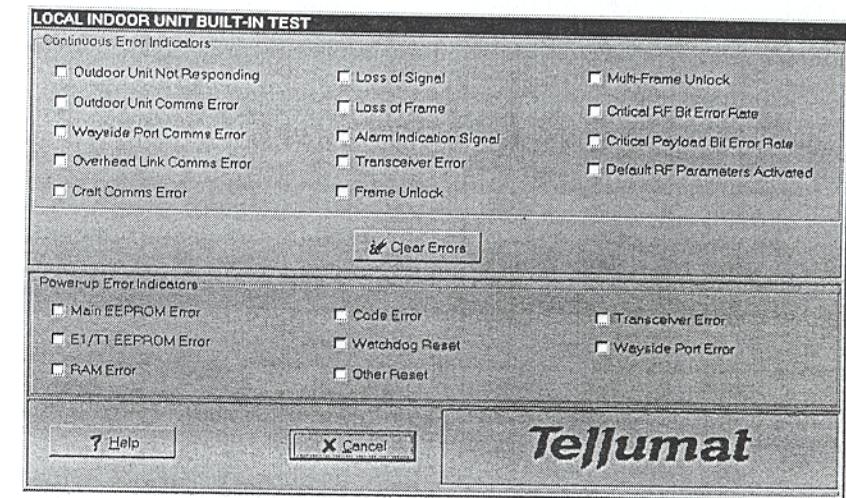
Figure 17. Indoor Unit: Typical Failure Alarm Details Screen.