

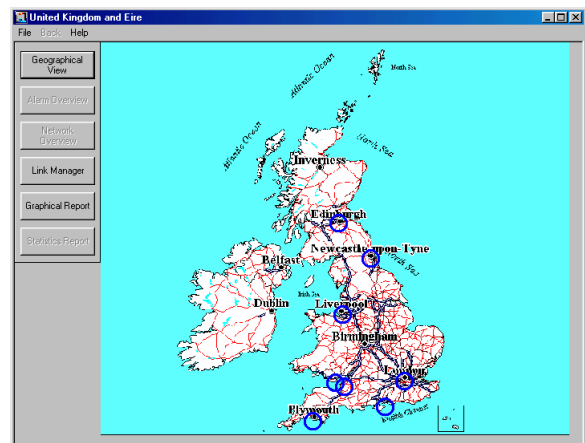
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## Cablefree ClusterManager™ - Datasheet

CableFree Cluster Manager™ is a powerful software suite capable of managing moderate or large networks of CableFree communication links. Cluster Manager allows single or multiplex workstations flexibility in accessing live, current or historic statistics which are collected from CableFree links over diverse media – SNMP or proprietary Ethernet, Direct RS232, Dial-up land-line or GSM modem connection. Cluster Manager is an essential tool enabling Service Providers and Enterprise IS managers alike to integrate Optical Wireless platforms into modern network infrastructure.

### Product Features

- Management, Monitoring, Logging and Configuration of multiple CableFree links
- Easy-to-use Windows Management Interface
- Viewing modes – Geographical Overview, Alarm Overview, and Network Overview
- Print-out and storage of operational status reports
- Individual configuration files for each link installed
- Real-time, logged, or snapshot-view of link status
- User-programmable major and minor Alarm conditions per-link
- View Serial numbers and Unit identifiers for asset management
- Long-term trend analysis enables programmed maintenance
- Scalability to support from 1 to 1,000 CableFree links
- Runs under Windows95, 98, NT4.0, ME, 2000
- Powerful Management Modules include **CableFree LinkManager™**, **CableFree GraphManager™** and **CableFree WebManager™**



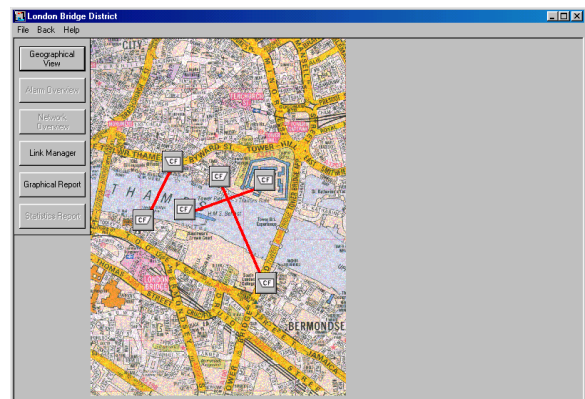
Connection from the Cluster Manager Master Workstation to individual CableFree units can be any of:

- Direct connection via RS232 connection either to PSU or optional IDU.
- Dial-up access over land-line or GSM modem
- Ethernet connection to IDU using proprietary format UDP protocols
- Ethernet connection to SNMP Proxy Agent using standards-based SNMP protocols

### Views

The CableFree Cluster Manager main console offers three major overviews of network performance.

- Geographical Overview (shown right) offers a multi-level graphical environment which allows the user to navigate round an installed network of links, from International, National, City and District levels.
- Alarm Overview shows a list of all links in the database currently showing alarms, which are grouped in order of priority, Current Major, Minor and Flagged Major and Minor.
- Network Overview shows a list of all links in the database, which can be browsed, searched or listed in user-selectable order



From any of these views, a number of sophisticated management, diagnostics and statistics modules can be launched to look at either a single or a group of links.

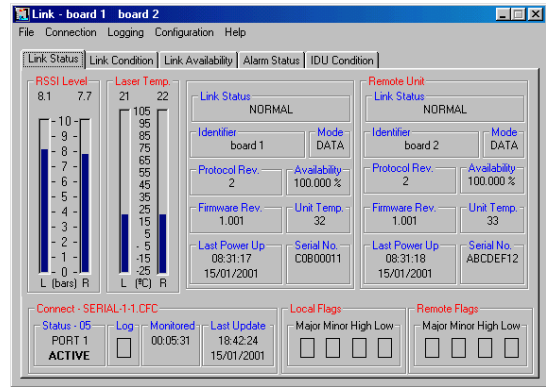
## CableFree Link Manager™

CableFree Link Manager, which can also operate as a stand-alone tool for diagnostic management of a single link, acts under Cluster Manager to show management information for any given link in the network. Link Manager appears as a tabbed dialog box console, the main page being a summary of link performance.

Link Manager is intended for use in interactive mode, pulling real-time or near-real-time statistics from the link under observation, and interactive reset of alarms, and remote set-up of Link Identifiers.

Local and Remote Statistics can be monitored:

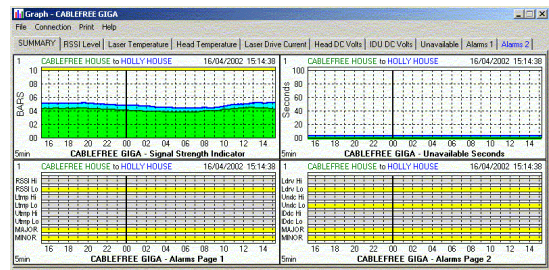
- RSSI
- Availability %
- Unit Temperature
- Laser Temperature
- DC Head Power
- DC IDU Power
- Laser Condition
- TX Power in dBm
- Alarms-Current & flagged
- Connection interface
- Last Power up Time
- Last Power up Date
- Monitored Time
- Unavailable Seconds
- Errored Seconds
- Bit Error Rate
- Last Valid Data Time
- Last Valid Data Date
- Firmware Version
- Protocol Version
- Serial Number
- Link Identifier
- Link Operating mode



## CableFree GraphManager™

CableFree GraphManager allows both at-a-glance graphical views of historic link performance, using data logged by the LogManager engine. Long-term change or degradation in system parameters can be highlighted and corrective maintenance scheduled.

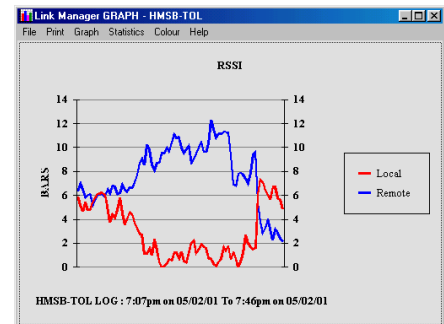
GraphManager displays all of the time-varying parameters available through LinkManager™ above.



## CableFree StatisticsManager™

CableFree Statistics Manager is an optional package which enables more sophisticated analysis of historic link performance, based on data logged by the main Cluster Suite LogManager engine.

Statistical analysis of trends includes automated computation and graphical overlay of Minimum/Maximum, Mean, Standard Deviation and Regression figures. Time windows can be applied, so that short, medium and long-term trends can be viewed and analysed.



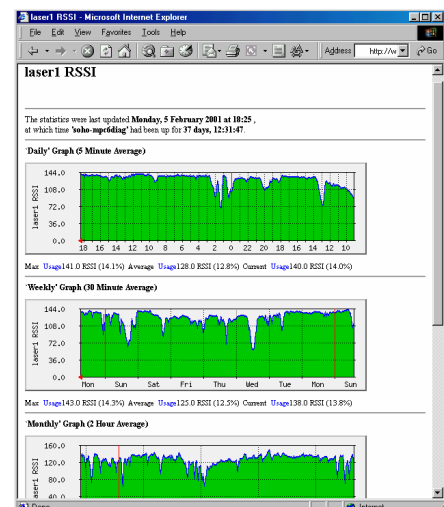
## CableFree WebManager™

Web Manager provides an optional Back-end portal to the Cluster Manager Suite to allow simple at-a-glance remote Intranet or Internet visibility of network or Link performance.

The main use for Web Manager is to provide visibility to staff or locations not equipped with access to the Cluster Manager suite, or who just need simple at-a-glance information.

Web Manager operates as part of the Cluster Manager suite by generating near-real-time graphical representations of selected statistics and uploading to a pre-defined Internet or Intranet web server. In the user's browser, pre-set web pages automatically update the graphical at periodic intervals.

The Web Manager can be customised to display web pages containing any key performance statistics collected by the main Cluster engine.



## Overall Software Specifications

O/S Platform	Microsoft Windows™
Compatibility	NT4.0, 2000, 98, ME, XP

## Management Connections

RS232	Local user interface
10BaseT Ethernet	LAN/WAN connection
Dry Contact alarms	8 or 16 inputs (optional)
Protocols	UDP, Proprietary

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### Cluster Server and Cluster Workstations

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PC Hardware requirements: Minimum

- Pentium-family 300MHz Processor
- 32MB RAM
- 800x600 screen
- 3Gb free space on Hard Drive
- CDROM drive to upload software
- Network Interface Card

PC Operating System requirements

- Windows 95, 98, NT4, 2000 or ME with TCP/IP networking support installed

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### Cluster Server only

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PC Hardware requirements: Additional beyond listed above

- Analogue Modem for dial-up connections
- 10/100 Ethernet Network Interface Card
- Free COM ports if needed for RS232 connections
- Backup Tape, ZIP or RW CD-ROM drive

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Product Code	License Terms	Description
CF CLUSTER	Single server, 5 Workstations, Up to 5 Links	CableFree ClusterManager™ Starter Pack for use with CableFree FSO systems. Includes ClusterManager™, LinkManager™, GraphManager™, LogManager™. 1 Server, 5 Workstations, up to 5 Links
CF CM LINK+5	Additional 5 links	Additional 5-Link license for CableFree Cluster Management Suite
CF CM WS+5	Additional 5 workstations	Additional 5-Workstation license for CableFree Cluster Management Suite
CF CM-WEB	Single server, Unlimited no. Links	CableFree WebManager™, Automatic upload of ClusterManager™ images for remote internet viewing using web browsers.
CF CM-STATS	Single server, Unlimited no. Links	CableFree StatisticsManager™, Statistical analysis of historical data collected by ClusterManager™.
CF LINK	Single workstation, Up to 5 Links	CableFree LinkManager™ for use with CableFree FSO systems. Includes LinkManager™ only.
CF ENT MAN	Single workstation, Up to 5 Links	CableFree Enterprise Management Suite for use with CableFree FSO systems. Includes LinkManager™, GraphManager™, LogManager™. 1 Workstation, up to 5 Links

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