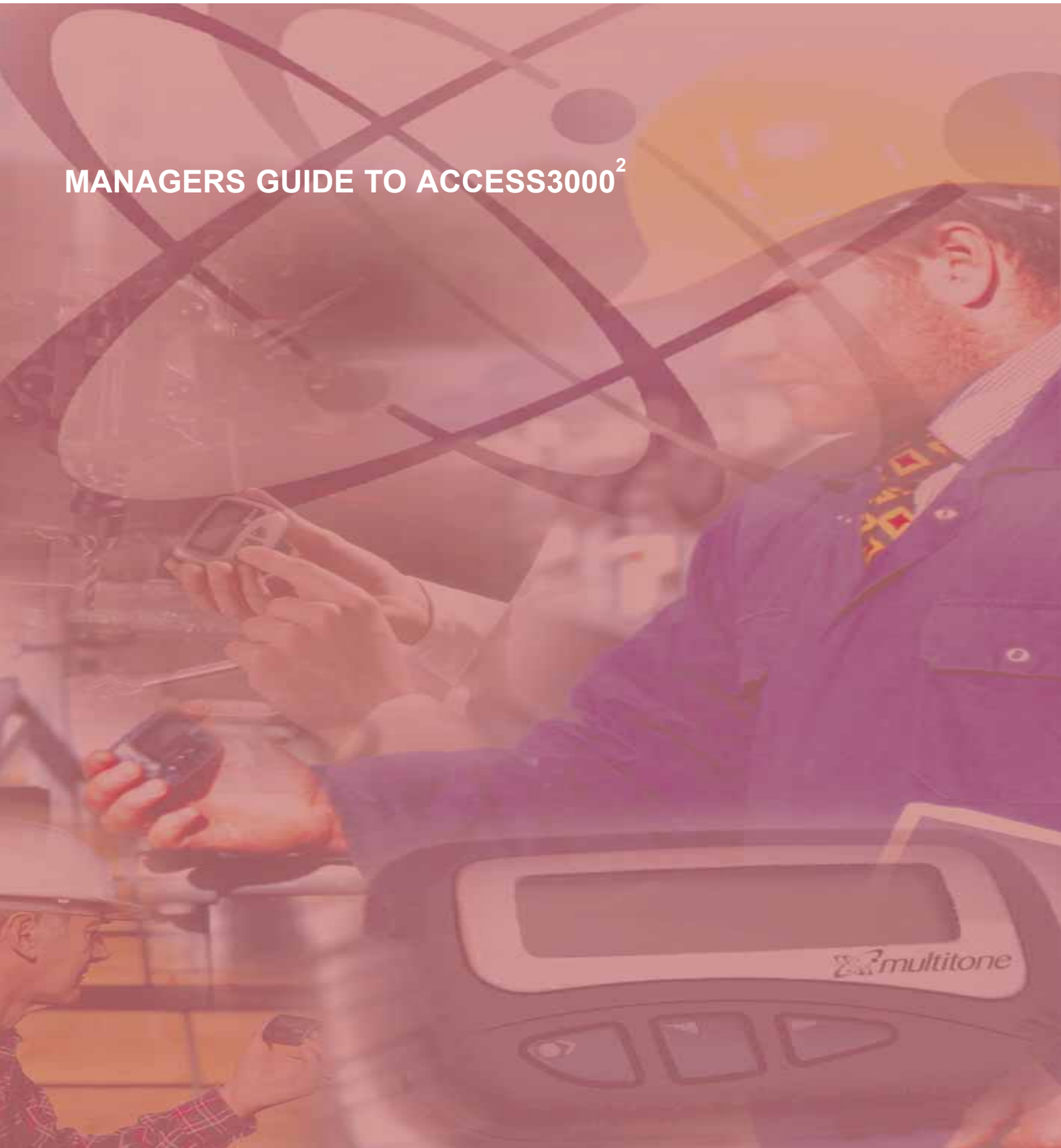
ACCESS3000²

multitone

MANAGERS GUIDE TO ACCESS3000²



ACCESS3000^2 System Overview

Multitone Access3000^2 is a comprehensive, wireless state-of-the-art private paging solution intended for medium or large hospitals and manufacturing facilities. Access3000^2 enables rapid and effective voice and messaging communications. It enhances productivity, emergency responsiveness as well as inter-communications with alarms, monitoring and automated facilities. Access3000^2 can be networked with digital wireless telephone systems for a totally wireless enterprise communication capability. The system is designed to provide high availability service and is fault tolerant for mission critical operations.

Access3000^2 - The On-site Network Host

Access3000^2 is an easily expanded paging solution based on a modular system. It can be tailored precisely to your communication requirements. Access3000^2 can support up to 5000 users, 250 teams and two-way voice. It provides a wireless communication platform that uses advanced design hardware and software to deliver a high degree of system resilience. This is an essential requirement where constant mission critical operation is required. Each functional element is connected via a simple data bus creating a Local Area Network (LAN). The modular approach enables a system solution to individual system requirements and offers an upgrade path if requirements change.

Access3000^2 - the world's most powerful and advanced on-site and wide-area private paging system

Competitive Features

The Access3000^2 most powerful features is its ability to combine both voice and text paging and the ability to back up the text with a spoken message is essential in mission critical operations. In an emergency people do not have time to read a message, a spoken message can tell the user, team member what has happened and where to go saving valuable seconds.

Designed using proprietary hardware and software, it is not PC based, consequently, it is not reliant on any third party hardware and software, maximizing system resilience.

Combined with advanced modularity, each element of the system is totally independent of each other. Should one element fail, this will not affect the rest of the system. For example the Paging Server, enables a person to make a paging call from their PC, is system independent from the rest of the Access3000^2. If the Server should fail, it would be possible to make paging call or a team call from the Local Control Unit or a telephone extension. Should the telephone system fail, it would be possible to make paging calls from the Local Control Unit and Server. A PC based solution would not be able to support this level of cross connectivity.

System Redundancy
Access3000^2 has been deliberately designed as a modular based paging solution. In order to ensure mission critical performance, Multitone deliberately choose to invest in its own proprietary hardware and software rather than tailor an off-the-shelf generic solution. This has enabled Multitone to deliver exceedingly high level of total system reliability, integrity and performance. For example the average MeanTime Between Failure (MTBF) of an Access3000^2 component is 9 years. A PC based paging solution cannot guarantee the same degree of reliability, performance or redundancy.

Mission Critical Operation
Sending a team call with voice on an Accesss3000^2 should take no more than 20 seconds to process and that includes talk-time. A normal text based paging call will take less than a second to process. No public paging system delivers this level of functionality nor can it guarantee this level of performance.

Fault Tolerant Operation
As with all mission critical systems it must be capable of supporting fault tolerant operation. Access3000^2 can be upgraded to automatic hot standby or manual warm standby. Using automatic hot standby a duplicate system will be required, with the master encoders connected together to ensure that the system master and paging databases maintain synchronization.

On detection of system fault or in the even more unlikely event of a system crash, Access3000^2 equipped for hot standby will automatically switch over to a duplicate paging system, enabling seamless and near immediate full system recovery. With manual or warm standby Access3000^2 uses a duplicate paging system, which is linked in order to maintain constant synchronization. Should the master Access3000^2 system fail, the changeover is accomplished manually using a changeover unit.

Messaging Formats
Tone Only calls have the most limited messaging and are useful when a paging call to a particular person always requires the same course of action. Different alert patterns can be used to signify the required response and its priority.

Text, Pre-stored & Numeric are popular message types. All Multitone pagers in additional to tone alert options support full alphanumeric text messaging for free text messaging.

Access3000^2 is capable of storing up to 100 pre-stored text messages. For regular messages "please call" or "please go to room" it is possible to select this as a pre-stored message from a list and just add the numeric information such as the telephone or room number.

One-way Speech is the most effective method of conveying complicated and urgent information to an individual or group of people. The most effective use of speech messaging is to a team, where the message can be reinforced with speech to ensure immediate action.

Two-way Voice is where the user does not have quick access to a telephone, nor the need for a wireless telephone handset. Two-way voice provides an effective solution as it enables an instant response so a call can be acknowledged ensuring that a task is completed.

On-Site Paging & Carrier Paging
Why private on-site paging versus carrier on-site paging? - an investment with an attractive payback versus monthly bills without any ownership and limited operation.

The investment cost of average range paging system costs $43,000 amortized over 5 years that is $11,380 per year. Compare this with carrier paging and assume you are using 100 pagers. In a typical system a paging calls is made once a minute. This costs $72 per pager per day. The yearly cost of carrier paging is $17,280. Over 5 years that is $86,400, twice the investment cost of a private paging system.

The Access3000^2 wireless on-site paging solution uses a private wireless network that is designed to meet new spectrum efficiency standards recently established by IC. Private paging networks do not involve monthly airtime charges and are among the most economical wireless communications available today.

STANDARD FEATURES

These features are available on every Access3000^2 system

Team Calling

A pager or a team of pagers can be set-up on the Access3000^2 system to receive the same paging call instantly. With just one paging call you can warn several people of fire, medical emergency, security breach or maintenance alert.

Sets

A set is a group of users that are paged sequentially. It may contain different pager types, such as numeric and text. When paging a Set the message sent will be dependent upon the most basic pager type within the Set. For example, if you have numeric and text pagers, only numeric messages can be sent.

Message Priority

Emergency, High, Normal, Low are used to arrange the order to which a paging call is sent. Each call may be sent using different tone alerts to signify their priority.

Multitone's Accesss3000^2 system can host both telephone and computer links to add even more functionality to an already impressive system.

Call Transfer

Paging calls can be automatically re-directed to another user when the user is registered absent.

Time of Day

This enables the time to be broadcast to all Multitone Pagers approximately once a minute. In addition to this feature, all Multitone system pagers will time stamp a paging call so you can check the time at which it was sent by the system and received on the pager.

Additional Radio Channels

This feature is available for separate on-site and wide area paging where you can connect a local transmitter for on-site use and a wide area transmitter for local or regional coverage. Alternatively you may wish to use multiple radio frequencies or where transmitter zoning is required.

Master Encoder & Slave Encoder

The heart of the Access3000^2 paging system is the combination of the Access3000^2 System Master, the paging database, and the encoder. The System Master manages the system and the paging database, which contains all the users and team records. The encoder queues and sends the paging calls via the transmitters. The encoder will support up to 8 slave encoders that provide additional radio channels. The slave encoder does not include PowerPage 3000 system master or the paging database. The 500 user and 1500 user encoder supports up to 12 closing contacts, this is in addition to any closing contact module supported by the system.

Telephone Interface

The Telephone Interface connects the Access3000^2 system to an existing telephone system. It enables users to send paging calls from a telephone extension. Clear voice prompts guide you through the process.

The Telephone Interface enables the following:

- Allows single user and team paging
- Absence registration
- Ability to transfer calls to another pager
- No need for a full-time operator
- Can be done from any extension
- Connected to extension or tie-line
- Can be used by DTMF push button phones

Automatic Contacts (DLC)

Any closing contact can be wired to an Access3000^2 to automatically generate a page.

Every system has 12 closing contacts are supplied as standard. Direct Line Contact (DLC) modules can be added. Typical inputs are fire-alarms, fault monitoring, and doorbells. Some typical outputs are door locks and floodlights.

Computer Interface

The system has the ability to send pager call from a computer or computer based systems via RS232. Accesss3000^2 supports a wide range of serial protocols transmission of numeric and full text messages such as Hospital Nurse Call systems, security and monitoring systems.

Absence & Charging

When a pager is placed in absence rack it automatically registers as being absent. Subsequent calls will be informed that the pager is unavailable or the call will be transferred. Ideally the absence racks should be situated at staff exits as a reminder to personnel to register their pager as absent after a shift is completed. The absence rack will re-charge the pager batteries overnight, if disposable cells are not used.

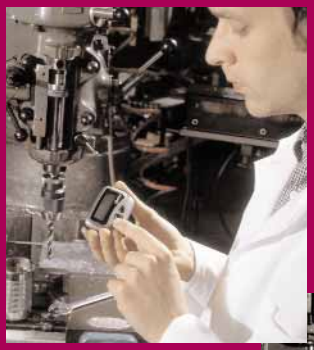
The Accesss3000^2 Network

The most powerful feature of Access3000^2 is the capability to precisely tailor the system to your requirements. The smallest system only requires an Encoder, 6 Slot Housing, a Local Control Unit and a Transmitter. A large system may comprise of multiple telephone cards, wide area dial out cards for carrier paging and mobile text messaging, a paging server for client/server paging, computer interface cards connecting to computer based monitoring devices.

Management Terminal

The management terminal is a dedicated PC running Windows 98, 2000 XP or NT, provides on-screen management of all records and replaces the Local Control Unit. It has the ability to make paging calls and incorporates a call logging facility that records the time and date that all paging calls were transmitted. The Terminal also provides a range of tools for statistical analysis, allowing call counts, call time, pager usage etc.

The call log data base can be downloaded to a spreadsheet for internal costing. If this terminal is not required a separate call logger may be used. The call logger will connect directly to a serial printer and records the time and date that all paging calls were sent.



Access3000^2 Network Server

An integrated Client/Server paging and system management capability facility allows any user who has access to a networked PC to make a paging call, pre-book and schedule a call, and undertake system management or review the call logging facility, from their PC. The Server has security and individuals are given levels of access. It is designed to operate as an adjunct to Access3000^2, to maximize the integrity of the paging system. Total system independence also ensures that even if the server crashes, the paging system will remain fully operational. The Server operates under Windows 2000, NT and XP also able to run over TCP/IP.

System Networking

The Remote Link Controller enables operation over multiple sites. The Controller allows the Access3000^2 internal LAN to be extended via any RS232 link, networks modems, and telephone lines. This provides a permanent link between different parts of the system. You can have networks at two or more locations with only one paging system.

Wide Area Dialout

Access3000^2 integrates to standard phone systems, wide area paging and mobile phone systems for regional and national coverage. Access3000^2 can be integrated with other Access3000^2 Systems at remote sites. It allows calls from the Access3000^2 input devices and direct line inputs to be automatically directed to on-site or off-site pagers and wireless telephones systems. A system supervisor can choose if calls are to be permanently directed or transferred to an off-site pager or mobile phone, when an on-site pager is registered absent.

Integrator

The Integrator enables full connectivity to digital cordless systems. It delivers paging functionality on a cordless phone at a fraction of the cost. It adds the ability for a wireless telephone system handset to function like a pager. It also enables emergency calls to one or multiple handsets with text, one-way or two-way speech, enabling a fast response.

PAGING CENTRAL

The Access3000^2 system is based around two databases of information. These are the Paging Database and the System Master.

The Paging Database

This database contains all the information 'programmed' by the system supervisor after the system was installed.
This information is stored in battery- backed memory so that if the system is switched off it is not lost. The battery has a life span of more than seven years.

The Paging Database contains all the details of all the pagers, teams and Direct Line Contacts, which are used on the system. Each user (person using a pager) is assigned a unique number (usually their telephone extension number) called their User Number. This User Number is totally independence of the pager address. This is a very useful feature in that it allows new pagers to be assigned to existing users who require new pagers or older pagers interchanged without having to change the number by which the user is called.

This is particularly handy if their current pager needs to be serviced or repaired. The paging database contains a record for each user number detailing the pager type, pager number, radio channels on which the paging call should be sent, the type of call allowed from telephones, transfer number, and status - absent or present.

The system refers to this record every time a call is sent, to enable the caller to know what type of message can be sent and to ensure messages are not send to incompatible pagers, for example voice to a non-voice. Each group alert team also has a record programmed against its team number. This information includes the type of message to be sent, the radio channel, any groups and any user numbers to be called. A group is a block of receiver numbers, e.g. 01 to 10 or 001 to 100.

Each closing contact has a closing contact number, with a record showing the team or user to be called, the type of message to be sent, its priority, which control unit can be used to give an additional speech message as part of the call.

Housings

The Access3000^2 system has two different types of housings for its modules. Each module typically requires one slot. The 6 and 12 slot unit is designed to hold a number of modules centrally. The single slot card housing is designed for individual modules such as a closing contact interface and this maybe located separately from the central housing.

Fully Programmable & Expandable

If it is an input or output which output should be operated and whether to actuate or reset the output, whether the operation of the output is to be timed or continuous. All these records are individually programmable by the system supervisor using the Local control unit or the System Management Terminal.

The ability to connect to multiple closing contacts connected to alarm and security systems all combine to deliver a very powerful wireless communications hub. The system can be expanded by using Multitone remote link controllers and slave encoders.
It is possible to spread the system over multiple sites, delivering a truly integrated onsite, regional or national private, professional paging solution.

The System Master

This database contains all information about the system, 'predefined' when the system was ordered. This is stored in the ROM memory. The System Master contains a parameter table, which is unique to each system and contains the details or all other modules on the system and their defined parameters. It also regulates the flow of messages on the data bus and performs essential on-line test routines. Parameters stored in the System Master can be changed. These system parameters include the types of pager on the system, the system size, which optional features are included and which beep codes are used by each module.

System Management

Day-to-day management of Access3000^2 is the simple task of keeping the paging database up-to-date. This is carried out by the system supervisor using a Local Control Unit or via the PC based Management Terminal. Supervisor functions include adding, editing and deleting users, teams, closing contact records and pre-stored messages, setting the system time, managing the wide area dial out database and the call logger and statistical analysis tools.

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