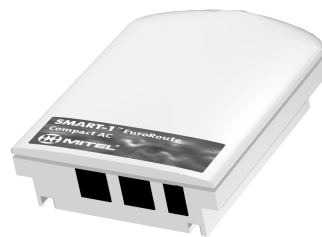


SMART-1

EuroRoute Compact AC Dialer

8345-001-115-BA

Installation &
Programming Guide



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SAFETY INSTRUCTIONS/REGULATORY INFORMATION



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Warning

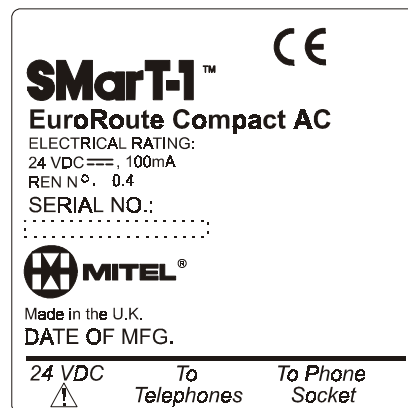
Failure to follow all instructions may result in improper equipment operation and/or the risk of electrical shock.

All installation personnel should consult the following information before attempting to install this product.

1. This product is to be installed and serviced by qualified personnel.
2. Read all instructions before attempting to install or use this product.
3. Install and configure this product with only the assemblies specified in this guide.
4. Grounding continuity is vital for the safe operation of telecommunications equipment. Ensure that the grounding conductor is installed before connecting telecommunications cabling to any system.
5. Never install telephone wiring during a lightning storm.
6. Never touch telephone wires or terminals unless the telephone line has been disconnected at the network interface.
7. Use caution when installing or modifying the telephone lines.
8. The AC power socket/outlet should be installed near the equipment and should be easily accessible.

Regulatory Label

The regulatory label shown below is located on the back of the Compact. This label contains the part number, serial number, revision levels and the necessary approval marks required.



Regulatory Notice for EC Users

DECLARATION OF CONFORMITY

We, Mitel Telecom Ltd.

Of, Mitel Business Park
Portskewett
Monmouthshire
NP26 5YR
UK

Declare that for the hereinafter mentioned product the presumption of conformity with the applicable essential requirements of

DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT (RTTE Directive) AND OF THE COUNCIL

is given.

Mitel Telecom/EuroRoute AC Compact/8345-001-MMD3TX and 8345-001-MMDXTX

Any unauthorized modification of the product voids this Declaration.

For a copy of the original signed Declaration of Conformity (in full conformance with EN45014), please contact the Regulatory Approvals Manager at the above address.

Note: This product meets EN60950, EN55022 and EN55024.

CHAPTER 1

1. Hardware Installation

1. 1. Description

The Compact AC package consists of:

- 1 Unit
- 1 Power Supply Unit
- 1 Safety Instructional Sheet
- 2 Line Cords (one for the network and one for the telephone).

1. 2. Connectivity

The Compact is intended to be placed in between the telephone wall outlet and the user's telephone. There are two RJ11 telecom cables, an RJ11 for connection to the Exchange and an RJ11 for connection to the resident's telephone or answering machine, that are used to connect the unit.

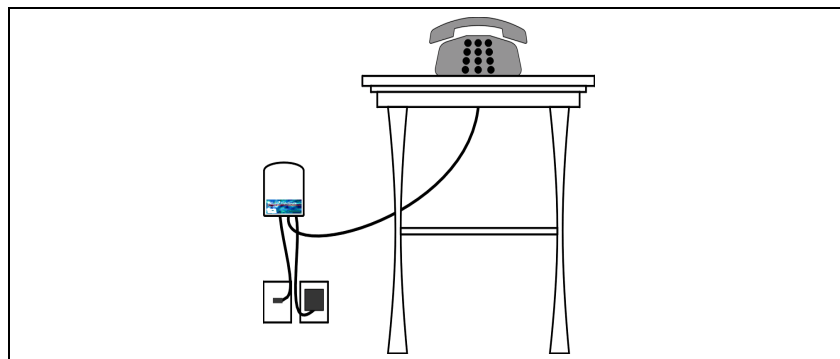
1. 3. Mounting

The Compact AC can be placed on a desk or any other flat surface or mounted vertically using self tapping screws. Avoid placing the Compact AC in areas where severe temperature exists, such as direct air flow from a heating duct, radiator or direct sunlight. This product is not intended for outdoor use.

The installer, resident, may use the supplied template (refer to page 63) as a guide to drill holes in the wall with a 3mm drill. Before mounting the Compact AC to a wall, the installer can supply two 18mm #6 pan-head screws and place them into pre-made holes in the wall.

When attaching the Compact AC to a plaster wall, insert the nylon anchors into the pre-made holes applying the 18mm #6 pan-head screws. The illustration in Figure 1.1 shows the positioning of the Compact AC.

Figure 1.1



1. 4. Connecting the Compact AC to Your Phone Line

- Verify that the two cables supplied with your Compact AC are connected. If they are not connected, please refer to the section titled, *Installing the Compact AC Connection Leads*.
- Unplug your telephone from the PSTN Wall Socket.
Note: If you have multiple extensions plugged into the wall socket, then route all of them through the Compact AC. You will be able to make calls from any of the connected extensions, and they will be routed correctly. Extensions hard-wired into the back of the PSTN socket will NOT be routed through the Compact AC.
- Plug the lead from the Compact AC connector labeled “*To Phone Socket*” into your wall socket.
- Connect your telephone(s) to the lead from the Compact AC labeled “*To Telephone*”.
- Connect the power supply to the power supply jack.
- Plug the power supply into a power outlet, and verify that the Mains switch is on.
- Pick up the telephone handset, and verify whether you have dial tone.
- Replace the handset.
- If you experience problems, please call your maintainer.

Note: Before disconnecting the power supply, disconnect the telephone network connections first.

1. 5. Power Failure

If a power failure occurs, the user’s telephone equipment will be connected directly to the Exchange line. The user will still have access to the telephone network, but the Compact AC will not screen or route calls.

1. 6. Emergency Number

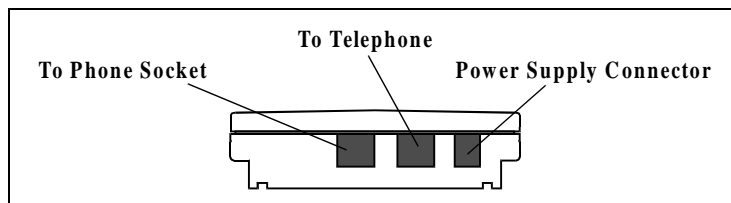
The emergency number **112** is hard coded. Regardless of any programming that may conflict with this number, the Compact AC will dial the emergency number directly to the Exchange and cut through. Other emergency numbers will need to be programmed into the Search Tables, for example, **999** for the UK.

1. 7. Installing the Compact AC Connections Leads

There are two RJ11 cables supplied with the Compact AC. Using these two cables, follow the listed steps to install your Compact AC.

- Looking at the Compact AC, you will see three connectors; two of which are used to connect the supplied cables.
- Connect one of the cables to the middle connector on the Compact AC. This connector is identified on the back of the unit as, “*To Telephone*”.
- Connect the other cable to the end connector on the Compact AC. This connector is identified on the back of the unit as, “*To Phone Socket*”.
- Unplug your telephone from the wall socket.
- Connect your telephone to the middle connector labeled, “*To Telephone*”.
- Connect your wall socket to the end connector labeled, “*To Phone Socket*”.

Figure 1.2



1. 8. Basic Hardware Description

1. 8. 1. Mechanical Description

The Compact AC consists of a plastic case, enclosed circuitry and an outboard power supply.

MECHANICAL
Weight: Main Unit - 120g Power Supply - 190g
Dimensions: Main Unit - 126 x 85 x 27mm Power Supply - 50 x 55 x 65mm
Mounting: Flush wall mount or desk mount

1. 8. 2. Electrical Description

The electrical characteristics are provided in the table below.

ELECTRICAL
Power: 24 Volts @ 125 mA
Connections: Standard RJ11 and power connector

CHAPTER 2

2. General Notes on Programming

2. 1. Acknowledgment Tones for Local Programming

While programming the Dialer with an MF4 telephone, you will hear tones that indicate correct entries, incorrect entries and programming time-outs. In general, after each correct entry, the Dialer will respond with two tones.

2. 1. 1. If You Hear

One tone means that the command you have entered has been recognised as being valid (correct); for example, after you enter **01** for the System Register **01**, you will hear one tone.

2. 1. 2. If You Hear

Two tones mean that the entry you have made has been accepted. This occurs after a parameter has received all the digits it needs to complete programming, or if you have entered an MF4 D on a variable length parameter. For example, if you dial **03** you will hear one tone; if you then dial 6, you will hear two tones.

2. 1. 3. If You Hear

Four long tones mean you have made an incorrect programming entry.

Notes: In the event of an invalid entry, wait for the four tones to stop and then retry the entry. No data will be accepted by the Dialer for an incorrect programming entry.

If you remain inactive for twenty-five seconds while in programming mode, the unit will exit from programming mode and revert to the previous program, without saving any changes that were made.

2. 2. Acknowledgment Tones for Remote Programming

While remotely programming the Dialer with an MF4 telephone, you will hear tones that indicate correct entries, incorrect entries and programming time-outs. In general, after each correct entry, the Dialer will respond with an MF4 D.

2. 2. 1. If You Hear an MF4 A

Hearing an MF4 A means that the command you have entered has been recognised as being valid (correct); for example, after you enter **29** for the Route Digit String Register **29**, you will hear the MF4 digit A.

2. 2. 2. If You Hear an MF4 D

Hearing an MF4 D means that the entry you have made has been accepted. This occurs after a parameter has received all the digits it needs to complete programming, or if you have entered an MF4 D on a variable length parameter. For example, if you dial **03** you will hear an MF4 A, if you then dial 6 you will hear D.

2. 2. 3. If You Hear an MF4 C

Hearing an MF4 C means you have made an incorrect programming entry.

Note: If you remain inactive for twenty-five seconds while in programming mode, the unit will exit from programming mode, without saving any changes that were made.

2. 3. Acknowledgment for Serial Programming

The Dialer will display the ‘>’ prompt when it is ready for input of a command. If the Dialer is in verify mode or a display command is entered, the contents of the register will be echoed on the display.

If the Dialer is in data entry mode and a valid command or register is entered at the ‘>’ prompt, the Dialer will echo a space to the display to indicate that it is ready for additional input, if required. Variable length entries must be terminated with a ‘d’ or ‘D’, followed by the <ENTER> key.

If an incorrect entry is made. The Dialer will respond with a ‘?’ and return to the ‘>’ prompt on the next line.

The only recognised characters are 0 through 9, *, #, a, b, c, d, A, B, C and D.

Note: The characters “,” and “.” are recognised as the characters * and # respectively.

2. 4. Terminating Variable Length Entries

To terminate a variable length entry (Search Tables, Dialling Rules, Route Digit Strings and Digit Strings) use an MF4 D.

2. 5. Local Programming with a Fourth Column MF4 Telephone

MF4 tones can be used to program the Compact AC. The default local programming code is #345*. To exit programming mode and save data, dial **98**, then wait for long tone to end, and then hang-up (go on-hook).

To program the Compact AC locally:

- Go off-hook and enter #345* (Contents of Register **68** by default)
- The Compact AC will respond with a long period of 400 Hz tone followed by two tones
- Once the tone is heard, local programming mode is entered.

Note: Because of the fact that variable length registers need to be terminated with the MF4 digit D, Mitel recommends that the Compact AC be programmed with a 4th column telephone (a phone with a key pad including the buttons A, B, C and D).

2. 6. Local Programming with a Serial Adapter

The serial adapter (8345-014) is used in conjunction with a personal computer (PC) to program the Dialer.

To program the Dialer locally using the serial adapter:

- Enter local programming using an MF4 telephone
- Enter the **94** command to put the Dialer in split mode
- Connect the DB9 end of the adapter to a PC communication port
- Set the communication parameters of the PC to 1200 bps, 8 data bits and one stop bit (8N1)
- Connect the line cord to the Dialer connector labeled *To Phone Socket*
- Press the <ENTER> key, and the Dialer will respond with a “?” prompt
- Enter the password, and press the <ENTER> key.
- If the password matches the contents of Register **68**, the Dialer will respond with an OK prompt and enter local program mode. If the password does not match the contents of Register **68**, the Dialer will display a ‘!’ prompt. Press the <ENTER> key to retry.

2. 7. Remote Programming with a Fourth Column MF4 Telephone

The Compact AC can be programmed remotely by using MF4 tones. Remote programming can be performed using the Call Home or the Auto Answer features. The default remote programming code is #124*. To exit programming mode and save data, dial **98** and hang up the remote telephone.

Note: Because of the fact that variable length registers need to be terminated with the MF4 digit D, the Compact AC must be programmed with a 4th column telephone (a phone with a key pad including the buttons A, B, C and D).

2. 8. Initialisation

Initialisation is a procedure that is used for re-loading the factory defaults into the Compact AC. This procedure will not affect the Call Home number that is stored in Register **71**.

To initialise a Compact AC that is connected to an Exchange line:

- With the telephone device off-hook, and the power supply unit disconnected, press and hold the * key located on the device
- While continuing to hold the * key, plug in the power supply unit
- Continue to hold the * key for 10 seconds
- Release the * key and listen for a 400 HZ tone followed by two tones
- Dial **98** and listen for a 400 HZ tone followed by a “click” sound; hang up.

2. 9. Auto-answer

Auto-answer is another way of entering a remote programming session. The Dialer will have the feature enabled if Register **13** contains a non-zero value, representing the time in 10 seconds increments, after which the Dialer will auto-answer the incoming call. The remote party initiates the call, and when the auto-answer timer expires, the Dialer auto-answers, and sends an MF4 1 to confirm it. After that, the Dialer waits for a period of twenty-five seconds for the remote password (Register **69**).

If the Compact AC receives the password within the twenty-five second period, it will respond by sending the MF4 B acknowledgment, followed by an MF4 D tone. The unit is then ready for programming. It remains in verify mode and can be changed to programming mode.

If the subscriber side goes off-hook during the auto-answer programming session, then the unit will stop the process. The line will be dropped, and dial tone will be returned to the user, allowing the user to make an outgoing call.

CHAPTER 3

3. Commands and Features

3.1. Commands and Features

Special Function Commands and Features allow access to specific data in the Compact AC or cause the Compact AC to do certain functions. You must be in the programming mode to use these commands.

Commands/Functions	Definition
70	Program Service Centre Number
71	Program Call Home Number
72	Set Date/Time
73	Call Home Date/Time
74	Interval Timer (Minutes)
75	Clear Search Tables
76	Default Route string (20-33)
78	Add a Search Table Entry
79	Remove a Search Table Entry
80	Display Service Centre Number
81	Display Call Home Number
82	Display Date/Time
83	Display Software Revision
84	Display Call Home Interval Timer
85	Display Search Tables
86	Display Serial Number
88	Drop from Program Mode
92	Enter Verify Mode
93	Re-load Defaults
94	Keep Dialer in Split Mode
95	Reset Statistics
96	Display Statistics
97	Exit Verify Mode
98	Exit Programming Mode
9D	Make the Dialer transparent

3. 2. Program Service Centre Number—70

When the command **70** is entered, a ♪ or an MF4 A will be heard. The Compact AC will then expect a Service Centre number, up to 22 digits, to be entered. An MF4 D must then be entered in order for the entry to be accepted. The Compact AC will return ♪♪ or an MF4 D, indicating that the entry was accepted. This feature is not affected by the commands **93**, **88**, or **98**.

For example, to use the phone number 0800123456 as the Service Centre Number, the entry would appear in the following format:

700800123456D.

The Service Centre number will be dialled out when a match of digits in the Search Tables executes the respective action code. For example, with the following Search Table entry, if the user dials **0003** the Compact AC will call the Service Centre number:

7804 0003 C0 D.

3. 3. Program Call Home Number—71

When the command **71** is entered, a ♪ or an MF4 A will be heard. The Compact AC will then expect a Call Home number, up to 22 digits, to be entered. An MF4 D must then be entered in order for the entry to be accepted. The Compact AC will return ♪♪ or an MF4 D, indicating that the entry was accepted. This feature is not affected by the commands **93**, **88** or **98**.

For example, to use the phone number 0800654321 as the Call Home Number, the entry would appear in the following format:

710800654321D.

Call Home will occur if the Date/Time (in Register **73**) is matched, or the Interval Timer (Register **74**) has been reached. Additionally, you can add a code in the Search Tables to force a Call Home. For example, with the following Search Table entry, if the user dials **0001** the Compact AC will Call Home:

7804 0001 C1 D.

Call Home can be disabled by setting Register **10** to a #.

3. 4. Set Date/Time—72

When the command **72** is entered, a ♪ or an MF4 A will be heard. The Compact AC will then expect a desired date and time (in a twenty-four hour format) to be entered in the following format:


YY(Year)MM(Month)DD(Day)HH(Hour)mm(Minute).

Following the minute digits (**mm**), the Compact AC will return ♪♪ or an MF4 D, indicating that the entry was accepted. The data is saved upon entry. This feature is not affected by the commands **93**, **88** or **98**.

For example, to set the Date/Time to May 27, 2000 at 1:35 PM, the entry would appear in the following format:

720005271335.

3. 5. Call Home Date/Time—73

When the command **73** is entered, a  or an MF4 A will be heard. The Compact AC will then expect a desired Call Home date and time (in a twenty-four hour format) to be entered in the following format:

MM(Month)DD(Day)HH(Hour)mm(Minute).


Following the minute digits (**mm**), the Compact AC will return  or an MF4 D, indicating that the entry was accepted. The data is saved upon entry. This feature is not affected by the commands **93**, **88** or **98**.

For example, to set the Date/Time to July 21 at 10:35 PM, the entry would appear in the following format:


7307212235.

Note: There is no field for the year with this command.

3. 6. Call Home Interval Timer (Minutes)—74

When the command **74** is entered, a  or an MF4 A will be heard. The Compact AC will then expect a time interval to be entered (six digits) in the following format:

mmmmmm(Minutes).

After the six digits have been entered, the Compact AC will return  or an MF4 D, indicating that the entry was accepted.

This time represents the number of minutes between Call Home attempts. For example, to program the Compact AC to Call Home every 24 hours, the entry would appear in the following format:

74001440.

Note: A non-zero entry in this register overrides the setting of Register **73**.

3. 7. Clear Search Tables—75

When the command **75** is entered, a  or an MF4 D will be heard, indicating that the Search Tables are cleared.

3. 8. Default Route Strings—76

When the command **76** is entered, a  or an MF4 A, followed by a  or an MF4 D will be heard, indicating that the defaults for the Route Strings (**20** - **65**) have been loaded.

3. 9. Add a Search Table Entry—78

The command **78** is used to enter Search Table data. Please refer to the specific details outlined in Chapter 7, *Search Tables*.

3. 10. Remove a Search Table Entry—79

The command **79** is used to remove Search Table data. Please refer to the specific details outlined in Chapter 7, *Search Tables*.



3. 11. Display Service Centre Number—80

When the command **80** is entered, a  or an MF4 A will be heard, and the Compact AC will echo the Service Centre number, followed by  or an MF4 D.

For example, the phone number 0800123456 entered with command **70** as the Service Centre Number would appear in the following format:

0800123456.

3. 12. Display Call Home Number—81

When the command **81** is entered, a  or an MF4 A will be heard, and the Compact AC will echo the Call Home number, followed by  or an MF4 D.

For example, the phone number 0800654321 entered with command **71** as the Call Home Number, would be displayed in the following format:

0800654321.

3. 13. Display Date/Time—82

When the command **82** is entered, a  or an MF4 A will be heard, and the Compact AC will echo the Call Home Date/Time and the current Date/Time in the following format:

MM(Month)DD(Day)HH(Hour)MM(Min)yy(year)mm(Month)dd(Day)hh(Hour)mm(Min),

followed by  or an MF4 D.

For example, if the Date/Time was entered (command **72**) as May 27, 2000 at 1:35 PM, and the Call Home Date/Time was entered (command **73**) as June 27 at 1:35 PM, then the entry would appear in the following format:

062713350005271335.

3. 14. Display Software Revision—83

When the command **83** is entered, a  or an MF4 A will be heard, and the Compact AC will echo the software revision of the unit being accessed in the following format (software generic, revision and build number):

0455A01,

followed by  or an MF4 D.



3. 15. Display Call Home Interval Timer—84

When the command **84** is entered, a  or an MF4 A will be heard, and the Compact AC will echo the number of minutes between Call Home attempts, followed by  or an MF4 D.

For example, the time would appear in the following format:

001440.

3. 16. Display Search Tables—85



When the command **85** is entered, a  or an MF4 A will be heard, and the contents of the Search Tables, if any exist, will be echoed, followed by  or an MF4 D. The format of a Search Table entry is shown in the following example:

0612345600000000000211000000000000.

The first digit represents table A (0) or B (1). The second digit represents the number of digits to screen (1 through F, representing 1 through 15[†]). The next fifteen digits represent the digits to screen, followed by a spare zero. The next seven digits represent action codes, followed by a spare zero. The last six digits represent Temporal Zones. Refer to page 41 for more information on the Search Tables.

[†] 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, 9=9, *=10, #=11, A=12, B=13, C=14, D=15 (Where A, B, C, & D are Fourth Column tones).

3. 17. Display Serial Number—86

When the command **86** is entered, a  or an MF4 A will be heard. The Compact AC will then echo the eight-digit serial number of the unit being accessed, followed by  or an MF4 D. For example, the serial number will appear in the following format:

CBCD9575.

Note: 0=0, 1=1, 2=2, 3=3, 4=4, 5=5, 6=6, 7=7, 8=8, 9=9, *=E, #=F, A=A, B=B, C=C, D=D (Where A, B, C, & D are Fourth Column tones).

3. 18. Drop from Program Mode—88

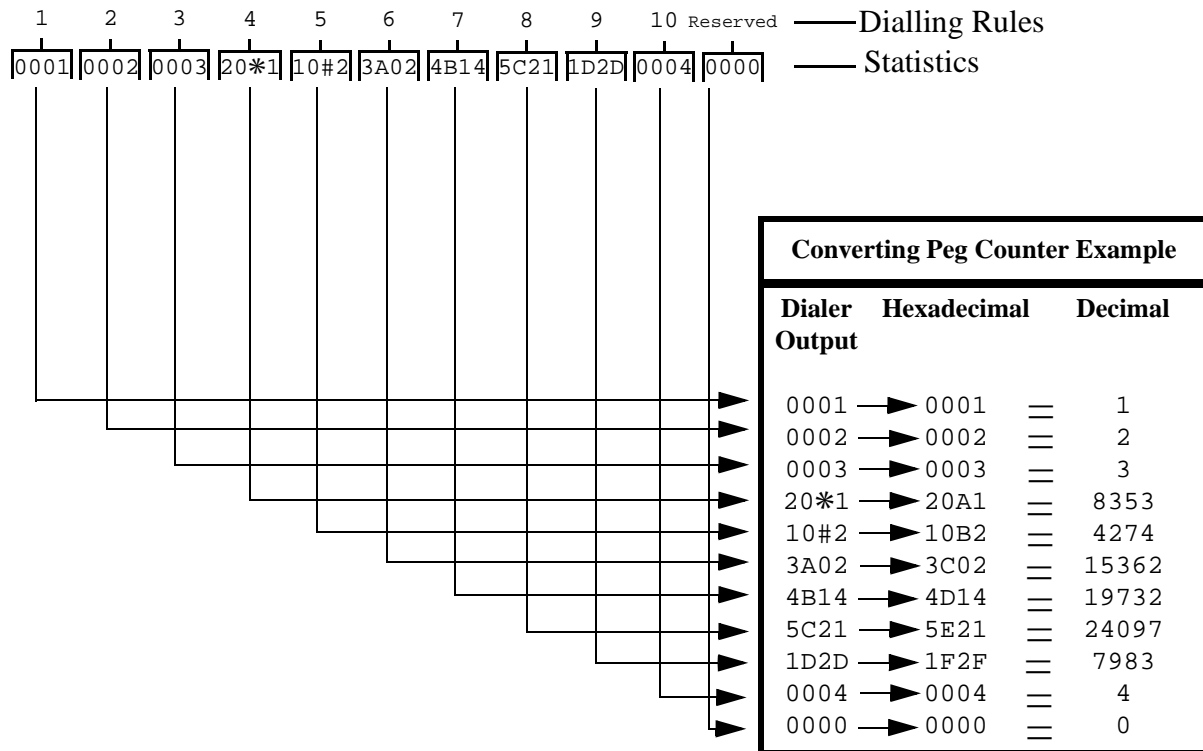
When the command **88** is entered an MF4 A will be heard in remote programming only, followed by a click sound. The Compact AC will then return to the idle state without saving any changes that were made to the program during the current programming session. This command does not affect registers **72**, **73**, or **74**.

3. 23. Display Statistics—96

When the command **96** is entered, a ♪ or an MF4 A will be heard. The Compact AC will then return any statistical information that has been logged, followed by ♪♪ or an MF4 D.

For example, the entry would be displayed in the following forty-four-digit format:

00010002000320S110#23A024B145C211D2D00040000.



Note: —▶ indicates that the Compact AC output is converted to hexadecimal, where * = A, # = B, A = C, B = D, C = E and D = F.


To define the statistical output of the Compact AC, you must first convert the output to hexadecimal. Once the output is converted to hexadecimal, it can be converted to decimal. The decimal value will represent the total number of calls made for each Dialling Rule.

There are four digits per Dialling Rule. The last four digits are reserved for future use.

3. 24. Exit Verify Mode—97

When the command **97** is entered, it will be acknowledged by a ♪♪ locally, or an MF4 A, followed by an MF4 D echoed to the remote end. The Compact AC will exit verify mode and enter into programming mode.

3. 25. Exit Programming Mode—98

When the command **98** is entered locally, a long  is heard, followed by a click sound; remotely, an MF4 D will be heard, followed by a click sound. *The user must wait until the Dialer clicks before hanging up the telephone device. The click should be heard within ten seconds.* The Compact AC will then return to the idle state, saving any changes that were made to the program during the current programming session.

3. 26. Set Dialer in Transparent Mode with Call Home Functionality—9D

When this command is entered during a programming session, the Compact AC will go to a transparent state once a valid exit from programming mode has been done. Any calls made after exiting programming mode will be routed via the PSTN. The Dialer will not route any calls.

The Compact AC must be unplugged from the power supply and then plugged back in again to restore the Compact AC to normal working conditions (routing calls).

CHAPTER 4

4. Programming Access Registers

4. 1. General

For your convenience, several methods of programming the Compact AC are available. This device can be programmed locally or remotely, and in each case a password is needed to gain access into program mode.

Each string entry must be terminated with an MF4 “D”.

4. 2. Local MF4 and Serial Port Password

The password defined by this register must be entered before entering into local MF4 programming mode or when entering a programming session in serial mode. After the password is entered via the MF4 telephone equipment, a burst of 400 Hz may be heard by the user, followed by two short beeps. After these tones are heard, the user will remain in verify mode.

Register	T =	Default
68 T	Local MF4 and serial port password (8 digits maximum)	#345*

4. 3. Remote MF4 Password

The password defined by this register must be entered before entering into remote MF4 programming mode.

Once the Remote Management Centre answers a call home or an incoming call is auto-answered, the remote party should send the Compact AC the password found in this register. When the Dialer receives the password, it will respond with an MF4 B, followed by an MF4 D.

Register	T =	Default
69 T	Remote MF4 password (8 digits maximum)	#124*

Note: The local and remote password strings may contain MF4 zeros within the strings. However, zeros at the end of the string will be ignored.

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CHAPTER 5

5. System and Trunk Registers

5. 1. General

You may want to change System and Trunk data if the default data does not meet your requirements.

5. 2. Off-hook Timing

This register controls the time that must expire before the Compact AC is ready to accept dialled digits.

Register	T =	Default
00 T	T = 1 for 100 ms T = 2 for 200 ms T = 3 for 300 ms T = 4 for 400 ms T = 5 for 500 ms T = 6 for 600 ms T = 7 for 700 ms T = 8 for 800 ms T = 9 for 900 ms T = * for 1000 ms T = # for 1100 ms T = A for 1200 ms T = B for 1300 ms T = C for 1400 ms T = D for 1500 ms	2

5. 3. On-hook Timing

An on-hook is determined by the absence of loop current on the line from the Exchange, for the specified amount of time.

Register	T =	Default
01 T	T = 2 for 200 ms T = 3 for 300 ms T = 4 for 400 ms T = 5 for 500 ms T = 6 for 600 ms T = 7 for 700 ms T = 8 for 800 ms T = 9 for 900 ms T = * for 1000 ms T = # for 1100 ms T = A for 1200 ms T = B for 1300 ms T = C for 1400 ms T = D for 1500 ms	3

5. 4. Rotary Inter-digit Pause

This register controls the amount of time that the Dialer inserts between each rotary digit it dials.

Register	T =	Default
02 T	T = 4 for 800 ms T = 5 for 1000 ms T = 6 for 1200 ms T = 7 for 1400 ms T = 8 for 1600 ms T = 9 for 1800 ms T = * for 2000 ms T = # for 2200 ms T = A for 2400 ms T = B for 2600 ms T = C for 2800 ms T = D for 3000 ms	4

5. 5. Inter-digit Time-out

This register controls the amount of time that the Dialer will wait in between digits dialled by the customer before timing-out.

Register	T =	Default
03 T	T = 1 for 1 second T = 2 for 2 seconds T = 3 for 3 seconds T = 4 for 4 seconds T = 5 for 5 seconds T = 6 for 6 seconds T = 7 for 7 seconds T = 8 for 8 seconds T = 9 for 9 seconds T = * for 10 seconds T = # for 11 seconds T = A for 12 seconds T = B for 13 seconds T = C for 14 seconds T = D for 15 seconds	4

5. 6. MF4 Rate

This register controls the amount of on and off time for the Dialer-dialled MF4 digits.

Register	T =	Default
04 T	T = 4 for 40 ms T = 5 for 50 ms T = 6 for 60 ms T = 7 for 70 ms T = 8 for 80 ms T = 9 for 90 ms T = * for 100 ms T = # for 110 ms T = A for 120 ms T = B for 130 ms T = C for 140 ms T = D for 150 ms	8

5. 7. Exchange Type

This register determines whether the Dialer will dial in MF4 or rotary. If **05 = 0**, the Dialer will automatically detect how the subscriber equipment is dialling and use that type of dialling to the network.

Register	T =	Default
05 T	T = 0 for automatically detect Exchange type T = 1 for MF4 lines T = 2 for rotary lines	0

Note: For a Call Home (if **05 = 0**) it will dial out in rotary by default, as there are no dialled digits to base the type on.

5. 8. Subscriber Type

This register determines whether the telephone being used with the Dialer is an MF4 or rotary device.

Register	T =	Default
06 T	T = 0 for automatically detect Subscriber type T = 1 for MF4 device T = 2 for Rotary device	0

5. 9. Rotary Dialling Rate

This register determines the rotary dialling rate that the Compact AC will use.

Register	T =	Default
07 T	T = 0 for 66/33 @ 10 pps T = 1 for 60/40 @ 10 pps	0

5. 10. Off-hook Tone

This register determines whether the user will hear a short tone burst before hearing dial tone.

Register	T =	Default
08 T	T = 0 for enabled T = 1 for disabled	0

5. 11. Centrex Digit

This register determines whether the user will first dial a centrex digit before dialling the destination number. Typically, the centrex service will require a 9 to be dialled before dialling a destination number. When a 9 is not dialled, the destination number can be treated as an extension number.

After the pre-determined centrex digit is dialled, it is stored in a buffer (refer to token **25** on page 33). The buffer can then be referenced at any time during the Dialling Rules sequence.

Register	T =	Default
09 T	T = 0 for the digit 0 T = 1 for the digit 1 T = 2 for the digit 2 T = 3 for the digit 3 T = 4 for the digit 4 T = 5 for the digit 5 T = 6 for the digit 6 T = 7 for the digit 7 T = 8 for the digit 8 T = 9 for the digit 9 T = * for Centrex off T = # for Centrex off T = A for Centrex off T = B for Centrex off T = C for Centrex off T = D for Centrex off	D

5. 12. Call Home Action

This register determines the action that will be taken, when the Compact AC calls home.

Register	T =	Default
10 T	T = 0 for direct dialling T = 1 for Route 1 T = 2 for Route 2 T = 3 for Route 3 T = 4 for Route 4 T = 5 for Route 5 T = 6 for Route 6 T = 7 for Route 7 T = 8 for Route 8 T = 9 for Route 9 T = * for Route 10 T = # for disable	0

5. 13. Default Route

This register determines the default route that the Compact AC will use.

Register	T =	Default
11 T	T = 0 for direct dialling T = 1 for Route 1 T = 2 for Route 2 T = 3 for Route 3 T = 4 for Route 4 T = 5 for Route 5 T = 6 for Route 6 T = 7 for Route 7 T = 8 for Route 8 T = 9 for Route 9 T = * for Route 10 T = A for cut through T = B for cut through T = C for cut through T = D for cut through	0

5. 14. Inter-ring Timing

This register determines the time between ring bursts in order to recognise incoming calls (ringing).

Register	T =	Default
12 T	T = 0 for no timing T = 1 for .5 seconds T = 2 for 1.0 seconds T = 3 for 1.5 seconds T = 4 for 2.0 seconds T = 5 for 2.5 seconds T = 6 for 3.0 seconds T = 7 for 3.5 seconds T = 8 for 4.0 seconds T = 9 for 4.5 seconds T = * for 5.0 seconds T = # for 5.5 seconds T = A for 6.0 seconds T = B for 6.5 seconds T = C for 7.0 seconds T = D for 7.5 seconds	8

5. 15. Time to Auto-answer

This register determines the amount of time after which the Compact AC will Auto-answer an incoming call.

Register	T =	Default
13 T	T = 0 for disable T = 1 for 10 seconds T = 2 for 20 seconds T = 3 for 30 seconds T = 4 for 40 seconds T = 5 for 50 seconds T = 6 for 60 seconds T = 7 for 70 seconds T = 8 for 80 seconds T = 9 for 90 seconds T = * for 100 seconds T = # for 110 seconds T = A for 120 seconds T = B for 130 seconds T = C for 140 seconds T = D for 150 seconds	0

5. 16. Dialling Rule Action Delay

This register determines the minimum amount of time after an off-hook condition is detected before the Compact AC will start executing or routing.

Register	T =	Default
14 T	T = 0 for none T = 1 for 500 ms T = 2 for 1000 ms T = 3 for 1500 ms T = 4 for 2000 ms T = 5 for 2500 ms T = 6 for 3000 ms T = 7 for 3500 ms T = 8 for 4000 ms T = 9 for 4500 ms T = * for 5000 ms T = # for 5500 ms T = A for 6000 ms T = B for 6500 ms T = C for 7000 ms T = D for 7500 ms	6

5. 17. Off-hook Time-out

This register determines the amount of time that the Compact will wait if it receives no dialed digits from the subscriber, before cutting through to the PTT (No action).

Register	T =	Default
15 T	T = 0 for forever T = 1 for 1 second T = 2 for 2 seconds T = 3 for 3 seconds T = 4 for 4 seconds T = 5 for 5 seconds T = 6 for 6 seconds T = 7 for 7 seconds T = 8 for 8 seconds T = 9 for 9 seconds T = * for 10 seconds T = # for 11 seconds T = A for 12 seconds T = B for 13 seconds T = C for 14 seconds T = D for 15 seconds	0

5. 18. Drop and Reseize Timer

Functionally, this is a system register. However, it is located in the Route String Register **66**, and it should be programmed accordingly (entered value followed by an MF4 D for the string termination).

This register determines the time between when the line is dropped and when it is seized again (repeated call attempts, route changes).

Register	T =	Default
66 T	T = 1 for 1 second T = 2 for 2 seconds T = 3 for 3 seconds T = 4 for 4 seconds T = 5 for 5 seconds T = 6 for 6 seconds T = 7 for 7 seconds T = 8 for 8 seconds T = 9 for 9 seconds	5

CHAPTER 6

6. Route Registers

6. 1. General

6. 1. 1. Route Strings

The Route Strings are used to store numbers, such as access numbers, personal identification numbers, etc. These strings are specific to the relative route. For instance, Route String **20** can only be used by Route 1.

Each string entry must be terminated with an MF4 “D”.

The following table shows the relationship between each Route String register and its related Route (Dialling Rule) register.

Route	Dialling Rule	Route String
1	30	20
2	31	21
3	32	22
4	33	23
5	34	24
6	35	25
7	36	26
8	37	27
9	38	28
10	39	29

6. 1. 2. Common Digit Strings

The Common Digit Strings are also used to store numbers. However, they differ from the Route Strings in that they are not route dependent. They can be accessed by any dialling rule.

The Common Digit Strings are used in two different ways. Generally, they differ from the Dialling Rule Strings in that they are not Dialling Rule dependent, so they can be accessed by any Dialling Rule.

The first use of the Common Digit Strings is to store numbers. These strings could be used to program things like the Long Distance Carrier Number and the Carrier Authorisation Number, etc. The Common Digit Strings registers are **40 - 49**.

The second use of the Common Digit Strings is to serve as continuation for the Dialling Rule Strings, allowing longer Dialling Rule Strings. Only registers **45 - 49** are used for this purpose. The Dialling Rule String will contain a continuation token (35 - 39), which will point to the continuation strings **45 - 49** respectively.

Each string entry must be terminated with an MF4 “D”.

6. 2. Digit Strings

The number stored in this register will be dialled out when the Dialling Rule token **24** is executed in the respective Dialling Rule. A maximum of 30 digits can be entered into each digit string.

Each string entry must be terminated with an MF4 D.

Digit String	S =
20 S	Route 1 Digit String, blank by default
21 S	Route 2 Digit String, blank by default
22 S	Route 3 Digit String, blank by default
23 S	Route 4 Digit String, blank by default
24 S	Route 5 Digit String, blank by default
25 S	Route 6 Digit String, blank by default
26 S	Route 7 Digit String, blank by default
27 S	Route 8 Digit String, blank by default
28 S	Route 9 Digit String, blank by default
29 S	Route 10 Digit String, blank by default

6. 3. Dialling Rules

The Dialling Rules are a set of tokens that are used by the Compact AC to control activity, such as dialling access numbers to the Exchange, etc. Registers **30 - 39** can accommodate 30 digits (comprised of 2 or 4 digit action tokens). If there is a need for a longer dialling string, then the continuation token, 35 - 39, will point to the respective continuation dialling strings, **45 - 49**.

Once a match is found in the Search Tables that contains a routing command, the dialling rules begin execution. There are a total of ten Dialling Rule (DR) Strings, plus five extensions.

Register	S =
30 S (DR 1) [†]	00 to dial a 0
31 S (DR 2) [†]	01 to dial a 1
32 S (DR 3) [†]	02 to dial a 2
33 S (DR 4) [†]	03 to dial a 3
34 S (DR 5) [†]	04 to dial a 4
35 S (DR 6) [†]	05 to dial a 5
36 S (DR 7) [†]	06 to dial a 6
37 S (DR 8) [†]	07 to dial a 7
38 S (DR 9) [†]	08 to dial an 8
39 S (DR 10) [†]	09 to dial a 9
	10 to dial an A
	11 to dial a B
	12 to dial a C
	13 to dial a D
	0* to dial a *
	0# to dial a #
	20 to dial buffer A digits
	21 to dial buffer A absorbed digits (A maximum of 8 digits)
	22 to dial buffer B digits
	23 to dial buffer B absorbed digits (A maximum of 8 digits)
	24 to dial DR related Digit String (Register 20 - 29)
	25 to dial Centrex digit (Register 09 ^{††})
	26 to switch to MF4
	27 to dial the Call Home number
	28 to dial the Service Center Number
	35 pointer to DR Continuation String in Register 45
	36 pointer to DR Continuation String in Register 46
	37 pointer to DR Continuation String in Register 47
	38 pointer to DR Continuation String in Register 48
	39 pointer to DR Continuation String in Register 49
	40 to dial the Common Digit String 1 (Register 40)
	41 to dial the Common Digit String 2 (Register 41)
	42 to dial the Common Digit String 3 (Register 42)
	43 to dial the Common Digit String 4 (Register 43)
	44 to dial the Common Digit String 5 (Register 44)
	45 to dial the Common Digit String 6 (Register 45)
	46 to dial the Common Digit String 7 (Register 46)
	47 to dial the Common Digit String 8 (Register 47)
	48 to dial the Common Digit String 9 (Register 48)
	49 to dial the Common Digit String 10 (Register 49)
[†] Refer to page 58 for the defaults of these registers. ^{††} Refer to page 28 for valid entries.	

6. 3. Dialling Rules (continued from the previous page)



Register	S =
30 S (DR 1) [†]	50pf to apply tone detector 50 ^{††}
31 S (DR 2) [†]	51pf to apply tone detector 51 ^{††}
32 S (DR 3) [†]	52pf to apply tone detector 52 ^{††}
33 S (DR 4) [†]	53pf to apply tone detector 53 ^{††}
34 S (DR 5) [†]	54pf to apply tone detector 54 ^{††}
35 S (DR 6) [†]	55pf to apply tone detector 55 ^{††}
36 S (DR 7) [†]	56pf to apply tone detector 56 ^{††}
37 S (DR 8) [†]	57pf to apply tone detector 57 ^{††}
38 S (DR 9) [†]	58pf to apply tone detector 58 ^{††}
39 S (DR 10) [†]	59pf to apply tone detector 59 ^{††}
	6N to delay Nx100 ms, i.e. 500 ms = 65
	7N to delay Nx1 second, i.e. 3 seconds = 73
	80pf to apply MF4 digit detector 50 ^{†††}
	81pf to apply MF4 digit detector 51 ^{†††}
	82pf to apply MF4 digit detector 52 ^{†††}
	83pf to apply MF4 digit detector 53 ^{†††}
	84pf to apply MF4 digit detector 54 ^{†††}
	85pf to apply MF4 digit detector 55 ^{†††}
	86pf to apply MF4 digit detector 56 ^{†††}
	87pf to apply MF4 digit detector 57 ^{†††}
	88pf to apply MF4 digit detector 58 ^{†††}
	89pf to apply MF4 digit detector 59 ^{†††}
[†] Refer to page 58 for the defaults of these registers. ^{††} Refer to <i>Tone Detectors</i> on page 36 for the complete definition. ^{†††} Refer to <i>MF4 Digit Detectors</i> on page 38 for the complete definition.	

6. 3. 1. Example 1

If Route 2 (Dialling Rule **31**) is programmed to dial the destination number found in Buffer A and connect the call, then the Dialling Rule would look like:

3120.

If Dialling Rule **31** must be programmed to adhere to the instructions listed above, the programmer would:





1. Enter **31**.
2. Hear .
3. Enter **20D**.
4. Hear .

6. 3. 2. Example 2

Dialling Rule Number 3 (Dialling Rule **32**) is programmed to do the following: detect precise dial tone; dial centrex digit; detect precise dial tone; dial out Register **40**; detect 400 Hz tone and go to Route 1 if not detected; pause two seconds; dial Register **41**; dial the digits 3456; pause two seconds; detect MF4 digit A and go to Route 1 if not detected; dial the destination number. In this case a continuation Dialling Rule String will be used.

32 500025500040510172410304050635
45 72840120.

If Dialling Rule **32** must be programmed to adhere to the instructions listed above, the programmer would:

1. Enter **32**.
2. Hear .
3. Enter **500025500040510172410304050635D**.
4. Hear .
5. Enter **45**.
6. Hear .
7. Enter **72840120D**.
8. Hear .

6. 4. Tone Detector and MF4 Digit Detector Token Descriptions

The Tone Detector and the MF4 Digit Detector tokens are both four digit action tokens. The first two digits (**5X** and **8X**) represent the Dialling Rule token. The last two digits (**pf**) represent pass/fail action codes.



The following table explains the “p” and the “f” values of the tone and MF4 Digit Detector tokens (**5Xpf** and **8Xpf**). Refer to page 36 for more information on the tone detector tokens.

pf =	
0	No Change; continue executing the next token
1 - *	Release and reseize the Exchange line; switch to a new Route (1 - *); see Note below
A	Deny the call
B	Skip the next token Note that this token should not be used if the next token is a tone detector token, as it will jump you to the middle of the 4 digit token.
Both the “p” and “f” values must have an action assigned to them.	

To create a tone detector token to use the programmable tone detector stored in Register **51** that will continue if the frequency is detected, but fail if the frequency is not detected, the Tone Detector token would look like:

510A.

If Tone Detector token **51** must be programmed to perform the instructions listed above, the programmer would:

1. Enter **30** (Dialling Rule 1).
2. Hear .
3. Enter **510A20D**. (The token 20 will dial the destination number after a successful detection of the tone specified in tone detector String **51**. The D is the string terminator).
4. Hear .

6. 5. Tone Detectors

There are a total of ten Tone Detector strings (**50 - 59**) that are available to any of the ten Dialling Rules (**30 - 39**). The following table explains the components of the strings.



5X LLXXHHXXGGWW											
X (String Number)	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">0 for string 1</td> <td style="width: 50%;">5 for string 6</td> </tr> <tr> <td>1 for string 2</td> <td>6 for string 7</td> </tr> <tr> <td>2 for string 3</td> <td>7 for string 8</td> </tr> <tr> <td>3 for string 4</td> <td>8 for string 9</td> </tr> <tr> <td>4 for string 5</td> <td>9 for string 10</td> </tr> </table>	0 for string 1	5 for string 6	1 for string 2	6 for string 7	2 for string 3	7 for string 8	3 for string 4	8 for string 9	4 for string 5	9 for string 10
0 for string 1	5 for string 6										
1 for string 2	6 for string 7										
2 for string 3	7 for string 8										
3 for string 4	8 for string 9										
4 for string 5	9 for string 10										
LLXX (Low Frequency)	Where LL = 03 - 15 and XX = 00 - 99 † ††										
HHXX (High Frequency)	Where HH = 03 - 15 and XX = 00 - 99 † ††										
GG (Guard Time)	01 through 99 (20 ms increments; where 01 = 20ms and 99 = 1880ms)										
WW (Wait Time)	01 through 99 (1 second increments; where 01 = 1 second and 99 = 99 seconds)										
† The minimum frequency to detect is 300Hz; the maximum, 1500Hz. †† The minimum and the maximum frequency should not be the same value. Mitel recommends using ± 20 Hz.											

6. 5. 1. Example 1

To create a tone detector that will look for a frequency for 200 milliseconds that is 300Hz, for a total of 5 seconds, the Tone Detector string would look like:

50030003201005.

If Tone Detector **50** must be programmed to perform to the instructions listed above, the programmer would:



1. Enter **50**. (Programmable Tone detector)
2. Hear .
3. Enter **030003201005D**. (LLXXHHXXGGWW)
4. Hear .

6. 5. 2. Example 2

To create a tone detector that will look for a frequency for 200 milliseconds that is 700Hz, for a total of 5 seconds, the Tone Detector string would look like:

51068007201005.

If Tone Detector **51** must be programmed to perform to the instructions listed above, the programmer would:



1. Enter **51**. (Programmable Tone detector)
2. Hear .
3. Enter **068007201005D**. (LLXXHHXXGGWW)
4. Hear .

6. 5. 3. Example 3

To create a tone detector that will look for a frequency for 1.2 seconds that is 1111 Hz, for a total of 4 seconds (the tone detector will then be used in Route 2, detecting 1111 Hz after dialling the carrier access code), the Tone Detector string would look like:

52109011306004.

If Tone Detector **52** must be programmed to perform to the instructions listed above, the programmer would:

1. Enter **52**. (Programmable Tone detector)
2. Hear .
3. Enter **0109011306004**. (LLXXHHXXGGWW)
4. Hear .

To enter the Tone Detector into Route 2 Dialling Rule, the string would look like:

3140520A4120.

Where:

- 31 - Dialling Rule for Route 2
- 40 - Common Digit String 1
- 52 - Tone Detector
- 0A - Tone Detector *pf* values
- 41 - Common Digit String 2
- 20 - Buffer A digits.

6. 6. MF4 Digit Detectors

There are a total of ten MF4 Digit Detector strings, using the dual purpose **50** through **59** strings. They are also available to any of the ten Dialling Rules, **30** through **39**, and they are referred to by the tokens 80 through 89. The following table explains the components of the strings.

5X DDT				
X	DD (MF4 Digit)		T (Wait Time)	
<i>Entered Value</i>	<i>Entered Value</i>	<i>MF4 Tone</i>	<i>Entered Value</i>	<i>Wait Time</i>
0 for String 50	00	0	0	2
1 for String 51	01	1	1	2
2 for String 52	02	2	2	4
3 for String 53	03	3	3	6
4 for String 54	04	4	4	8
5 for String 55	50	5	5	10
6 for String 56	06	6	6	12
7 for String 57	07	7	7	14
8 for String 58	08	8	8	16
9 for String 59	09	9	9	18
	0*	*	*	20
	0#	#	#	22
	0A	A	A	24
	0B	B	B	26
	0C	C	C	28
	*C	D		



Note: When this detector is in use while digits are being dialled on the subscriber side, the detector may fail.

6. 6. 1. Example

To create an MF4 Digit Detector that will look for the MF4 digit A for a total of 6 seconds, the MF4 Digit Detector string would look like:

540A3.

If MF4 Digit Detector String **54** must be programmed to perform to the instructions listed above, the programmer would:

1. Enter **54**. (Programmable Tone detector)
2. Hear .
3. Enter **0A3D**. (DDT)
4. Hear .

6. 7. Common Digit Strings

The number stored in these registers will be dialled out when the respective Dialling Rule token is executed (refer to table on page 33). Refer to page 58 for default values.

Strings	S =	
40 S	Common Digit String 1	
41 S	Common Digit String 2	
42 S	Common Digit String 3	
43 S	Common Digit String 4	
44 S	Common Digit String 5	
	<i>First Use</i>	<i>Second Use</i>
45 S	Common Digit String 6	Continuation Dialling Rule String 1
46 S	Common Digit String 7	Continuation Dialling Rule String 2
47 S	Common Digit String 8	Continuation Dialling Rule String 3
48 S	Common Digit String 9	Continuation Dialling Rule String 4
49 S	Common Digit String 10	Continuation Dialling Rule String 5

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CHAPTER 7

7. Search Tables

7. 1. General

The Search Tables consist of two buffers, Buffer A and Buffer B, in which the user's dialled digits are screened for the purpose of assigning a pre-defined set of instructions. It is here in the Search Tables where calls can be barred or sent to a select carrier via a Dialling Rule.

One of the following codes must be entered before each Search Table entry:

- **78** enter programming
- **79** delete programming.

The format of the Search Tables is **X-N-D-R-L-E-A-C-S-T-Z1-Z2-Z3-Z4-Z5-Z6**:

- X** Search Table Buffer
- N** Number of Digits in the Destination Number
- D** Digits that must be matched
- R** Route Codes
- L** Lock Codes
- E** Execute Codes
- A** Absorb Codes
- C** Discard Codes
- S** Search Codes
- T** Tone Codes
- Z1** Temporal Zone One Codes
- Z2** Temporal Zone Two Codes
- Z3** Temporal Zone Three Codes
- Z4** Temporal Zone Four Codes
- Z5** Temporal Zone Five Codes
- Z6** Temporal Zone Six Codes

An MF4 D must be entered after the last Temporal Zone Code used (**Z1** through **Z6**) in each Search Table entry to terminate the string. It is possible to enter the MF4 D after any action code. The subsequent codes will be filled with 0. The Compact will automatically insert the value 0 for the codes that follow the Route Code (L-E-A-C-S-T-Z1-Z2-Z3-Z4-Z5-Z6).

7. 2. Search Table Buffers (X)

There are two Search Table buffers, Buffer A and Buffer B. Either buffer can screen up to 15 digits. Collectively, they can screen a 30 digit number. The Search Tables are designed to analyze the digits dialled by the user based on a pre-programmed set of instructions, the call is processed accordingly. The call may be routed or even denied.

Buffer A is the first Search Table that is accessed. Buffer B is only accessed if the respective action code is executed. Refer to Search Codes (S) on page 43.

7. 3. Number of Digits in the Destination Number (N)

This number represents the total number of digits of the destination number. For example, if the digits that must be matched are 436562, then this number would be 6.

7. 4. Digits That Must Be Matched (D)

These digits represent the digits that the Compact must screen. The digits include literal digits and wildcard entries. For example, the digits that must be matched may be 12148441234. Assuming that all calls beginning with 1214 are desired to be routed to Route 1, the entry 1214CCCCCC could be used to accomplish this task, rather than programming every possible entry.

7. 5. Route Codes (R)

When a match of digits is found, the Compact will execute the command defined by this code. These codes are responsible for routing calls, barring calls and dialling calls directly to the Exchange.

Note: Call barring can be overridden. For example, if the number 001 is barred, a customer may dial 00 and wait for the inter-digit timer to expire. After the timer is expired, the customer may continue to dial out without any restrictions, providing that the digits 00 were previously routed.

7. 6. Lock Codes (L)

When a match of digits is found, and the Route Code has been executed, the Compact will execute the command defined by this code. If the value is 1, then the route cannot be changed, even if a command to do so is later encountered. If the value is 0, then the route can be changed if a command to do so is later encountered.

If the value of the previous code (Route Code) is B, then the Special Customer Program Access codes are active. If the value of the previous code (Route Code) is C, then the Extended Action codes are active.

7. 7. Execute Codes (E)

When a match of digits is found, and the Route and Lock Codes have been executed, the Compact will execute the command defined by this code. If the value is 0, then no changes will take place. If the value is 1, then the desired Dialling Rule will begin execution.

7. 8. Absorb Codes (A)

When a match of digits is found, and the Route, Lock and Execute Codes have been executed, the Compact will execute the command defined by this code. If the value is 0, then no digits will be absorbed. If the value is any digit from 1 through 8 (Dialling Rule Code 21, refer to page 33), then the number of digits defined by this code will be absorbed. For example, if the digits 3938000 are matched, and this value is 3, then the digits 393 will be absorbed. The remaining digits will continue to be screened. Because the absorbed digits are saved, they can be re-dialled by using the access codes **21** or **23**.

7. 9. Discard Codes (C)

When a match of digits is found, and the Route, Lock, Execute and Absorb Codes have been executed, the Compact will execute the command defined by this code. If the value is 0, then no digits will be discarded. If the value is any digit from 1 through C, then the number of digits defined by this code will be discarded. For example, if the digits 3938000 are matched, and this value is 3, then the digits 393 will be discarded. The remaining digits will continue to be screened.

7. 10. Search Codes (S)

When a match of digits is found, and the Route, Lock, Execute, Absorb and Discard Codes have been executed, the Compact will execute the command defined by this code. If the value is 0, then no action is taken. If the value is 1, then the remaining digits will be screened in Buffer B, unless the current buffer is B, in which case the Dialer will quit searching. If the value is 2, then all searching will be stopped, whether the current Search Table is Buffer A or Buffer B. If the value is 3, then all searching will be stopped after the inter-digit timer has expired, whether the current Search Table is Buffer A or Buffer B.

7. 11. Tone Codes (T)

When a match of digits is found, and the Route, Lock, Execute, Absorb, Discard and Search Codes have been executed, the Compact will execute the command defined by this code. If the value is 0, then no action is taken. If the value is 1 through 6, the Compact will return a tone relative the number entered, to the user. For example, if the value is 4, then four tones will be heard by the user.

7. 12. Temporal Zone Codes (Z1 Through Z6)

The Compact will be able to route calls based on the internal clock maintained by the Dialer's internal processor. The clock is not powered by a battery but is powered while the Dialer is connected to an Exchange line or to an external power source. A loss of both sources will require that the clock be re-programmed with the correct time and date.

There are six temporal zones, which can be programmed into Registers **60** through **65**. At the start of each call, the Dialer will examine each register and compare it to the current time of day and day of week to determine which zone is currently in effect. Once a match is made, all succeeding registers will be ignored. If temporal zone routing is not in effect, a Search Table match will execute the normal route action. If temporal zone routing is in effect, a Search Table match will result with the Dialer routing the call to the route specified for the selected time zone. If this value is 0, the routing action will follow the normal route.

7. 13. Description of Search Tables Format (Table 1)

X-N-D-R-L-E-A-C-S-T-Z1-Z2-Z3-Z4-Z5-Z6															
X	N	D	R	L	E	A	C	S	T	Z1	Z2	Z3	Z4	Z5	Z6
0 = Buffer A 1 = Buffer B	1 = 1 digit 2 = 2 digits 3 = 3 digits 4 = 4 digits 5 = 5 digits 6 = 6 digits 7 = 7 digits 8 = 8 digits 9 = 9 digits * = 10 digits # = 11 digits A = 12 digits B = 13 digits C = 14 digits D = 15 digits	0 = match the digit 0 1 = match the digit 1 2 = match the digit 2 3 = match the digit 3 4 = match the digit 4 5 = match the digit 5 6 = match the digit 6 7 = match the digit 7 8 = match the digit 8 9 = match the digit 9 * = match the digit * # = match the digit # A = match the digits 0 or 1 B = match the digits 2 - 9 C = match any digits	0 = no change 1 = Route 1 2 = Route 2 3 = Route 3 4 = Route 4 5 = Route 5 6 = Route 6 7 = Route 7 8 = Route 8 9 = Route 9 * = Route 10 # = direct dial destination number (Buffer A) Only A = deny call Bx = Special Customer Program Access (Table 2) Cx = Extended Action Code (Table 3)	Normal Operation 0 = no change 1 = lock route	0 = no change 1 = start/continue execution	0 = no change 1 = absorb the first digit 2 = absorb the first 2 digits 3 = absorb the first 3 digits 4 = absorb the first 4 digits 5 = absorb the first 5 digits 6 = absorb the first 6 digits 7 = absorb the first 7 digits 8 = absorb the first 8 digits	0 = no change 1 = discard the first digit 2 = discard the first 2 digits 3 = discard the first 3 digits 4 = discard the first 4 digits 5 = discard the first 5 digits 6 = discard the first 6 digits 7 = discard the first 7 digits 8 = discard the first 8 digits 9 = discard the first 9 digits * = discard the first 10 digits # = discard the first 11 digits A = discard the first 12 digits B = discard the first 13 digits C = discard the first 14 digits	0 = no action 1 = go to Buffer B (Quit searching if current Buffer is Buffer B) 2 = quit searching 3 = quit searching after the next inter-digit time-out	0 = no action 1 = one tone 2 = two tones 3 = three tones 4 = four tones 5 = five tones 6 = six tones	0 = no change 1 = Route 1 2 = Route 2 3 = Route 3 4 = Route 4 5 = Route 5 6 = Route 6 7 = Route 7 8 = Route 8 9 = Route 9 * = Route 10 # = direct dial destination number (Buffer A) Only A = deny call B = Special Customer Program Access (Table 2) C = Extended Action Code (Table 3)	0 = no change 1 = Route 1 2 = Route 2 3 = Route 3 4 = Route 4 5 = Route 5 6 = Route 6 7 = Route 7 8 = Route 8 9 = Route 9 * = Route 10 # = direct dial destination number (Buffer A) Only A = deny call B = Special Customer Program Access (Table 2) C = Extended Action Code (Table 3)	0 = no change 1 = Route 1 2 = Route 2 3 = Route 3 4 = Route 4 5 = Route 5 6 = Route 6 7 = Route 7 8 = Route 8 9 = Route 9 * = Route 10 # = direct dial destination number (Buffer A) Only A = deny call B = Special Customer Program Access (Table 2) C = Extended Action Code (Table 3)	0 = no change 1 = Route 1 2 = Route 2 3 = Route 3 4 = Route 4 5 = Route 5 6 = Route 6 7 = Route 7 8 = Route 8 9 = Route 9 * = Route 10 # = direct dial destination number (Buffer A) Only A = deny call B = Special Customer Program Access (Table 2) C = Extended Action Code (Table 3)	0 = no change 1 = Route 1 2 = Route 2 3 = Route 3 4 = Route 4 5 = Route 5 6 = Route 6 7 = Route 7 8 = Route 8 9 = Route 9 * = Route 10 # = direct dial destination number (Buffer A) Only A = deny call B = Special Customer Program Access (Table 2) C = Extended Action Code (Table 3)	

7. 14. Description of Search Tables Format (Table 2)

Route Codes (R) = Bx	
(Special Customer Program Access) x =	
0 = write to string 40	7 = write to string 47
1 = write to string 41	8 = write to string 48
2 = write to string 42	9 = write to string 49
3 = write to string 43	* = write Centrex Digit
4 = write to string 44	# = write Call Home number
5 = write to string 45	A = write Service Centre number
6 = write to string 46	
When the Special Customer Program Access codes are used, the remaining codes are ignored.	

7. 15. Description of Search Tables Format (Table 3)

Route Codes (R) = Cx	
(Extended Action Code) x =	
0 = call Service Centre	
1 = force Call Home	
3 = multi-digit Centrex	
When the Extended Action Codes are used, the remaining codes are ignored.	

The following Special Customer Access Codes are available by default:

- 0001 - To Force a Call Home
- 0003 - To Call Service Centre number
- 0004 - To Write the Call Home number
- 0005 - To Write the Service Centre number
- 0006 - To write the Centrex digit.

7. 15. 1. Example

To enter the Call Home number the programmer must use the following format:

0004 XX YYYYYYYYYYYY

XX represents the Call Home Number digit length.

Where:

XX = 01 to 09 for digit length 1 to 9

0* for 10 digits

0# for 11 digits

YYYY - Represents the Call Home Number.

7. 16. Default Search Table Matrix

Add Table	Tables A (0) or B (1)		Digits to screen	Route	Lock	Execute	Absorb	Discard	Search	Tone	Temp. Zone 1	Temp. Zone 2	Temp. Zone 3	Temp. Zone 4	Temp. Zone 5	Temp. Zone 6
	0X	1X														
78	4		0001	C	1											
78	4		0003	C	0											
78	4		0004	B	#											
78	4		0005	B	A											
78	4		0006	B	*											
	0X or 1X		D	R	L	E	A	C	S	T	Z1	Z2	Z3	Z4	Z5	Z6

7. 17. Search Table Examples

The following examples explain how the Search Tables might be used. The actual number to match will be shown boldfaced.

7. 17. 1. Example 1

When the user dials the number 18 followed by any digit 2 through 9, followed by any two digits, the Compact, using Table A, will; route the call to Route 4; lock the route; execute the Dialling Rule tokens; discard the digits 18; screen the remaining digits in Buffer B; and finally, provide two tones. The following example explains where tones would be heard if programming the Dialer via MF4 tones:

78 05 18BCC4110212D

7. 17. 2. Example 2

When the user dials the number 2 through 9 followed by any two digits, the Compact, using Table A, will: not change routes; not lock the route; not begin executing the route; not absorb any digits; not discard any digits; screen the remaining digits in Buffer B; and finally, provide two tones. The following example explains where tones would be heard if programming the Dialer via MF4:

78 03 BCC0000012D

7. 17. 3. Example 3

When the user dials the number 147, the Compact, using Table A, will: not change routes; not lock the route; not begin executing the route; not absorb any digits; not discard any digits; not screen; and finally, not provide tones. The following example explains where tones would be heard if programming the Dialer via MF4:

78 03 1470D

Note that in this example, the D terminating character was entered after the Route Code. In this case, the Compact will place 0 for the remaining code values.

7. 17. 4. Example 4

When the user dials the number 0 followed by any four digits, the Compact, using Table B, will: route the call to Route 1; lock the route; begin executing the route; not absorb any digits; not discard any digits; not screen; and finally, not provide tones. The following example explains where tones would be heard if programming the Dialer via MF4:

78 15 0CCCC111D

Note that in this example, the D terminating character was entered after the Execute Code. In this case, the Compact will place 0 for the remaining code values.

7. 17. 5. Example 5

When the user dials the number 0331, the Compact, using Table B, will: route the call to Route 2; lock the route; begin executing the route; not absorb any digits; not discard any digits; not screen; and finally, not provide tones. The following example explains where tones would be heard if programming the Dialer via MF4:

78 14 0331211D

Note that in this example, the D terminating character was entered after the Execute Code. In this case, the Compact will place 0 for the remaining code values.

7. 17. 6. Example 6

When the user dials the number 0 followed by any ten digits, the Compact, using Table B, will: not change routes; not lock the route; not begin executing the route; not absorb any digits; not discard any digits; quit searching; and finally, not provide tones. The following example explains where tones would be heard if programming the Dialer via MF4:

78 1# 0CCCCCCCCC000002D

Note that in this example, the D terminating character was entered after the Search Code. In this case, the Compact will place 0 for the remaining code value.

7. 17. 7. Example 7

Extended Action Codes cause matched digits in the Search Tables to perform specific actions. The following example explains where tones would be heard if programming the Dialer via MF4 to force a Call Home:

78 04 0001CID

7. 17. 8. Example 8

Multi-digit Centrex can be used if the user needs to dial multiple digits to obtain an outgoing line. It will only activate once per call and will satisfy search criteria. An exception entry should be entered to create direct dial. Any further codes in this table entry are ignored. The following example explains where tones would be heard if programming the Dialer via MF4 to accept the digits 92 as the multi-digit centrex digits:

78 02 92C30001D

After the user dials the digits 92, dial tone will be returned. Buffer A will be cleared, and screening will re-start in Buffer A.

Note that in this example, the D terminating character was entered after the Search Code. In this case, the Compact will place 0 for the remaining code value.

CHAPTER 8

8. Time of Day/Week Routing

8. 1. General

The Compact AC can be programmed to route calls based on time factors.

8. 2. Time of Day/Week Routing Strings

The Compact AC may be set to recognise 6 temporal zones for the purpose of time of day routing. Each zone is represented by a seven-digit string. The first digit is used as a day of week indicator. The next four digits are used as the start time; the last four digits, the end time. These strings are blank by default.



Temporal Zones	S =		
	Day of Week	Start Time	End Time
60 S (Temporal String 1)	0 = ignore time of day routing [†]	hhmm	hhmm
61 S (Temporal String 2)	1 = Sunday		
62 S (Temporal String 3)	2 = Monday	hh = 00 - 23	hh = 00 - 23
63 S (Temporal String 4)	3 = Tuesday	mm = 00 - 59	mm = 00 - 59
64 S (Temporal String 5)	4 = Wednesday		
65 S (Temporal String 6)	5 = Thursday		
	6 = Friday		
	7 = Saturday		
	8 = Saturday/Sunday		
	9 = Monday through Friday		
	* = any day		

[†] Any following times will be ignored.

8. 2. 1. Example

The following example explains where tones would be heard if programming the Dialer via MF4 for the conditions described in A, B and C:

78  04  08001114020230000D 

60  921002359  (Monday through Friday, 9:00 PM to Midnight)

61  800002359  (Saturday through Sunday, 24 hours)

In the examples given above, **60** is Temporal Zone 1, and **61** is Temporal Zone 2.

When the user dials the digits 0800, the following conditions will exist.

A) Monday Through Friday, From 12:01 AM To 8:59 PM

Using Search Table Buffer A, the Compact AC will: route calls beginning with 0800 to Dialling Rule 1; lock the Dialling Rule; execute the Dialling Rule; absorb the digits 0800; not discard any digits; screen the remaining digits in Buffer B; and provide no tones.

B) Monday Through Friday, From 9:00 PM To Midnight

The Compact AC will perform the same actions as described in A, but it will route the call to Dialling Rule number 2.

C) Saturday At 12:01 AM Through Sunday At Midnight

The Compact AC will perform the same actions as A, but it will route the call to Dialling Rule number 3.

CHAPTER 9

9. Call Home

9. 1. Call Home on Installation

One minute after the Compact AC is powered up, the unit will call the carrier's Remote Management Centre (RMC), using the following process. The unit will go off-hook and dial the phone number (refer to Register **71** on page 16) to the RMC. The unit will then wait for a response from the RMC for a period of twenty-five seconds.

If no response or an invalid password is received from the RMC, the unit will go on-hook and re-attempt to Call Home after one minute. The unit will then wait for a response from the RMC for a period of twenty-five seconds.

If no response or an invalid password is received after the second attempt, the Dialer will wait for one hour before re-attempting to Call Home. The unit will then wait for a response from the RMC for a period of twenty-five seconds.

If the third attempt is unsuccessful, the Dialer will Call Home every 24 hours, until the Dialer receives a response from the RMC. If the unit receives the valid password (contents of Register **69**) within the twenty-five second period, it will respond by sending an MF4 B followed by an MF4 D tone to the RMC. The unit will then remain in view mode, where it will be ready to echo programming information or be ready to be changed to program mode. If the unit receives an invalid password it will disconnect, and it will consider it an unsuccessful attempt.

If the subscriber side telephone goes off-hook during the Call Home programming session, the unit will stop the Call Home process. The line will be dropped, and dial tone will be returned to the user, allowing the user to make an outgoing call.

If anyone enters program mode and then exits from program mode using the **98** command, the Call Home process will be cleared. The process will not begin again, unless the Call Home Well Time feature is programmed, or the interval timer is a non-zero value. Call Home may be defeated by setting Register **10** to a # value.

9. 2. Call Home

Call Home will occur when the programmed time and date stored in Register **73** (Alarm register for Call Home) or the Interval Timer, Register **74** is reached. The unit will go off-hook and dial the phone number (refer to Register **71** on page 16) to the RMC. The unit will then wait for a response from the RMC for a period of twenty-five seconds.

If no response or an invalid password is received from the RMC, the unit will go on-hook and re-attempt to Call Home after one minute. The unit will then wait for a response from the RMC for a period of twenty-five seconds.

If no response or an invalid password is received after the second attempt, the Dialer will wait for one hour before re-attempting to Call Home. The unit will then wait for a response from the RMC for a period of twenty-five seconds.

If the third attempt is unsuccessful, the Dialer will Call Home every 24 hours, until the Dialer receives a response from the RMC. If the unit receives the valid password (contents of Register **69**) within the twenty-five second period, it will respond by sending an MF4 B followed by an MF4 D tone to the RMC. The unit will then remain in view mode, where it will be ready to echo programming information or be ready to be changed to program mode. If the unit receives an invalid password it will disconnect, and it will consider it an unsuccessful attempt.

If the subscriber side telephone goes off-hook during the Call Home programming session, the unit will stop the Call Home process. The line will be dropped, and dial tone will be returned to the user, allowing the user to make an outgoing call.

If anyone enters program mode and then exits from program mode using the **98** command, the Call Home process will be cleared. The process will not begin again, unless the Call Home Well Time feature is programmed, or the interval timer is a non-zero value. Call Home may be defeated by setting Register **10** to a # value.

9.3. Forced Call Home

Forced Call Home is accomplished by a technician going off-hook and dialling the Force Call Home code (refer to the note below). After this number is dialled, the unit will begin processing the Call Home, while returning a 400 Hz tone (four beeps) to the user. The intention of this tone is to advise the user to hang up. The unit will then wait for a response from the RMC for a period of twenty-five seconds. If the attempt to Call Home is unsuccessful, the Dialer will not re-attempt to Call Home. If the unit receives a valid password within the twenty-five second period, it will respond by sending an MF4 B followed by an MF4 D tone to the RMC. The unit will then remain in view mode, where it will be ready to echo programming information or be ready to be changed to program mode.

If no response or an invalid password is received from the RMC, the unit will go on-hook, back to idle state.

If the subscriber side telephone goes off-hook during the Call Home programming session, the unit will stop the Call Home process. The line will be dropped, and dial tone will be returned to the user, allowing the user to make an outgoing call. In the case of the Forced Call Home, the subscriber will get dial tone only if he goes off-hook after the Dialer entered the programming session.

If anyone enters program mode and then exits from program mode using the **98** command, any pending retry Call Home process will be cleared. The process will not begin again, unless the Call Home Well Time feature is programmed, or the interval timer is a non-zero value. Call Home may be defeated by setting Register **10** to a # value.

The following example explains where tones would be heard if programming the Dialer via MF4 to use **0001** as the Force Call Home code:

78 04 0001CID


Note that in this example, the **D** terminating character was entered after the Lock Code. In this case, the Compact AC will place 0 for the remaining code value.

Note: The Force Call Home code must be programmed into the Search Tables.

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APPENDIX 1

A. 1. Glossary and Abbreviations of Terms

	Represents a burst of 400 Hertz tone transmitted over the phone to the subscriber.
Absorbed Digits	Absorbed digits are digits that are “absorbed” by the Compact AC via the Search Tables. The digits that are “absorbed” are copied to a special buffer, which can hold a maximum of 8 digits. The absorbed digits can be totally removed from the destination number or appended to, via the respective Dialling Rule token.
Centrex	A business telephone service provided by the PSTN that gives the subscriber unique telephone features, similar to the features provided by a PABX.
Destination Number	The destination number is the number that is dialled to reach the called party.
Dialling Rule	A register that contains a set of tokens that shape the manner in which the Compact AC will interface with the Exchange.
Exchange Line	The physical connection between a telephone service subscriber and the PSTN that provides the telephone service.
Hz	Hertz.
mA	Milliamperes.
MF4 Dialling	MF4 tone dialling.
ms	Milliseconds.
PABX	Private Automatic Branch Exchange.
pps	Pulses per second.
PSTN	Public Switched Telephone Network.
Rotary Dialling	Pulse dialling.

Route	A Route is a set of pre-programming dialling rules that can include access codes to be used to place a telephone call over a particular service or carrier. A Route is chosen by matching dialled digits with a template in the Search Tables.
Search Tables	The Search Tables consist of two buffers, Buffer A and Buffer B, in which the user's dialled digits are screened for the purpose of assigning a pre-defined set of instructions. It is here in the Search Tables where calls can be barred or sent to a select carrier via a Dialling Rule.
sec	Second.
Temporal Zone	A temporal zone is a time zone based on the day of the week and on a time-of-day window. The Dialer can be programmed to select routes based on the time of day and the day of week.

APPENDIX 2

A. 2. Compact AC Register Index

A. 2. 1. System and Trunk Registers

Register	Default	Description	Page No.
00	2	Off-hook Timing	25
01	3	On-hook Timing	25
02	4	Rotary Inter-digit Pause	26
03	4	Inter-digit Time-out	26
04	8	MF4 Rate	26
05	0	Exchange Type	27
06	0	Subscriber Type	27
07	0	Rotary Dialling Rate	27
08	0	Off-hook Tone	27
09	D	Centrex Digit	28
10	0	Call Home Action	28
11	0	Default Route	28
12	8	Inter-ring Timing	29
13	0	Time to Auto-answer	29
14	6	Dialling Rule Action Delay	29
15	0	Off-hook Time-out	30

A. 2. 2. Route Digit Strings Registers

Register	Default	Description	Page No.
20	Blank	Route 1 Digit String	32
21	Blank	Route 2 Digit String	32
22	Blank	Route 3 Digit String	32
23	Blank	Route 4 Digit String	32
24	Blank	Route 5 Digit String	32
25	Blank	Route 6 Digit String	32
26	Blank	Route 7 Digit String	32
27	Blank	Route 8 Digit String	32
28	Blank	Route 9 Digit String	32
29	Blank	Route 10 Digit String	32

A. 2. 3. Dialling Rule Strings

Register	Default	Description	Page No.
30	Blank	Route 1 Dialling Rule	33
31	Blank	Route 2 Dialling Rule	33
32	Blank	Route 3 Dialling Rule	33
33	Blank	Route 4 Dialling Rule	33
34	Blank	Route 5 Dialling Rule	33
35	Blank	Route 6 Dialling Rule	33
36	Blank	Route 7 Dialling Rule	33
37	Blank	Route 8 Dialling Rule	33
38	Blank	Route 9 Dialling Rule	33
39	Blank	Route 10 Dialling Rule	33

A. 2. 4. Common Digit Strings

Register	Default	Description	Page No.
40	Blank	Digit String One	39
41	Blank	Digit String Two	39
42	Blank	Digit String Three	39
43	Blank	Digit String Four	39
44	Blank	Digit String Five	39
45	Blank	Digit String Six	39
46	Blank	Digit String Seven	39
47	Blank	Digit String Eight	39
48	Blank	Digit String Nine	39
49	Blank	Digit String Ten	39

A. 2. 5. Tone Detector Strings

Register	Default	Description	Page No.
50	Blank	Tone Detector or MF4 Digit Detector String One	36 and 38
51	Blank	Tone Detector or MF4 Digit Detector String Two	36 and 38
52	Blank	Tone Detector or MF4 Digit Detector String Three	36 and 38
53	Blank	Tone Detector or MF4 Digit Detector String Four	36 and 38
54	Blank	Tone Detector or MF4 Digit Detector String Five	36 and 38
55	Blank	Tone Detector or MF4 Digit Detector String Six	36 and 38
56	Blank	Tone Detector or MF4 Digit Detector String Seven	36 and 38
57	Blank	Tone Detector or MF4 Digit Detector String Eight	36 and 38
58	Blank	Tone Detector or MF4 Digit Detector String Nine	36 and 38
59	Blank	Tone Detector or MF4 Digit Detector String Ten	36 and 38

A. 2. 6. Time of Day/Week Routing Strings

Register	Default	Description	Page No.
60	Blank	Time of Day/Week Routing String One	49
61	Blank	Time of Day/Week Routing String Two	49
62	Blank	Time of Day/Week Routing String Three	49
63	Blank	Time of Day/Week Routing String Four	49
64	Blank	Time of Day/Week Routing String Five	49
65	Blank	Time of Day/Week Routing String Six	49

A. 2. 7. Drop and Reseize Timer Register

Register	Default	Description	Page No.
66	5	Drop and Reseize Timer	30

A. 2. 8. Programming Access Registers

Register	Default	Description	Page No.
68	#345*	Local DTMF and Serial Port Password	23
69	#124*	Remote DTMF Password	23

A. 2. 9. Commands and Features

Command	Description	Page No.
70	Program Service Centre Number	16
71	Program Call Home Number	16
72	Set Time/Date	16
73	Call Home Time/Date	17
74	Call Home Interval Timer (Minutes)	17
75	Clear Search Tables	17
76	Reload Default Route Strings	17
78	Add Search Table Entry	18
79	Delete Search Table Entry	18
80	Display Service Centre Number	18
81	Display Call Home Number	18
82	Display Time/Date	18
83	Display Software Revision	19
84	Display Call Home Internal Timer	19
85	Display Search Tables	19
86	Display Serial Number	19
88	Drop from Program Mode	19
92	Enter Verify Mode	20
93	Reload Factory Defaults	20
94	Keep Dialer in Split Mode	20
95	Reset Statistics	20
96	Display Statistics	21
97	Leave Verify Mode	21
98	Exit Program Mode	22
9D	Set Dialer in Transparent Mode with Call Home Functionality	22

APPENDIX 3

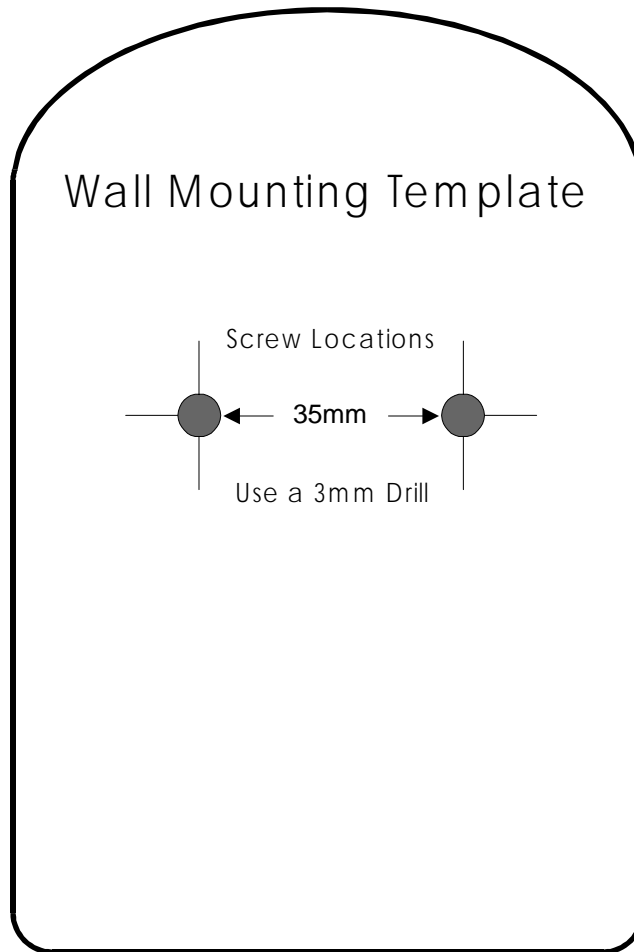
A. 3. Hardware Specifications

Hardware Specifications	Min	Typical	Max	Units
RINGER IMPEDANCE	15			K Ohms
RINGING SENSITIVITY (25 Hz)	25			VAC
OFF-HOOK CURRENT	17.5		50	mA
BATTERY FEED Open Circuit Constant Current Short Circuit Current	13 mA	24	13.5 13.5	VDC nom. mA mA
MF4 RECEIVER Level Twist Time between tones	-22 -6 40		+3	dBm comp. ms
ROTARY RECEIVER (RATE)	8		12	pps
MF4 SENDER Levels [dBV (ZR)] VF _L = -13 dBm ± 2.5 dB VF _L = -11 dBm ± 2.5 dB Duration (programmable)	70			ms
ROTARY SENDER (10 pps)	33/66		40/60	ms
AC OPERATING RANGE AC line 230/240 VAC, ± -10%, 50 Hz Temperature Humidity Holdover	0° 0%	20	45° 85%	mA C non cond. ms
JACKS DC power—2.5 mm Equipment 2 RJ11 cables				
REGULATORY CONFORMITY Safety—EN60950 Emissions—EN55022, Class B Immunity—EN50082-1 Network—CTR21				

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APPENDIX 4

A. 4. Wall Mounting Template



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