
MASTERCALL

OFFICE EXTENDER

MODEL MC-4044 SERIES 5

OPERATOR AND INSTALLATION GUIDE

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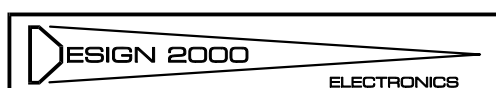
AUGUST, 1998

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THE OFFICE EXTENDER

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THE OFFICE EXTENDER

INTRODUCTION

The OFFICE Extender supports 'telecommuting' or 'teleworking' applications by extending the facilities of an analogue extension of a PABX, Centrex, CustomNet or any ACD to any remote location, without the need for dedicated lines.

The OFFICE Extender has three main applications:

1. Allows remote workers (telecommuters) to have full access to the main office PABX for business related calls, while appearing to callers as if they are in the office. This is referred to as 'Telecommuting'. ie. commuting by telephone.
2. Allows remote ACD agents (operators) to dial in from 'home' telephones and log on to the office PABX Automatic Call Distributor (ACD) and act as local agents.
3. Allows Assessors at any location to remotely monitor calls. The Assessor is able supervise the way in which operators are handling calls and then use their assessments to assist in coaching/training programs and quality call management.

Note:

There is a distinction between the 'worker' and the 'agent'. Essentially they are both company employees, however the 'worker' is a staff member that uses a normal PABX extension, and the 'agent' is an operator that is required to log on to a PABX ACD, in order for the ACD to send calls to their extension.

OVERVIEW

The Office Extender is used by telecommuters and operators working from home or at any location remote from the main business office.

It provides full access from the 'Small Office/Home Office' (SOHO) to the company PABX via the Public Switched Telephone Network (PSTN).

The Office Extender provides remote access to the PABX features, including call back, call transfer and three way calling, from any DTMF telephone.

The Office Extender allows the telecommuter to be contacted by an internal call from any PABX extension.

The telecommuter, from any location, can contact anyone within the organisation by making an internal call, and similarly make external calls via the PABX by dialling the appropriate outside line access code.

Outside callers calling into the company PABX can be transferred to the remote location without being aware that the telecommuter is not on the company premises.

Because the Office Extender is located at the PABX, all internal calls are free and external calls are billed to the company's account. The telecommuter is therefore free to use any 'home' telephone line, at any time, for telecommuting purposes. This obviates the need for expensive 'dedicated' lines which otherwise tie the telecommuter to a particular location.

On a larger scale, the Office Extender is ideal for extending the facilities of a PABX ACD where analogue agents (operators) can remotely log on and operate in the same way as a local analogue agent.

DESCRIPTION

The Office Extender supports telecommuting applications by extending the facilities of an analogue extension of a PABX, Centrex or ACD to any remote location, without the need for dedicated lines.

The Office Extender interfaces a PABX or ACD analogue extension to either another PABX extension (with a directory number assigned to it) or to a direct PSTN exchange line.

Access to the system is achieved by dialling the directory number assigned to the Office Extender, and following the voice guide instructions provided by the Office Extender.

There are six different modes of operation:

1. Dial Mode: The agent dials in to the Office Extender and after the 'log on' procedure the agent hangs up. A call is then made to the agent for each call assigned by the ACD, and the agent's phone rings as normal. This mode is designed for infrequent call traffic, where a per call connection is made. The agent does not have to be 'tied' to the phone for the whole session, and can perform other tasks while waiting for the phone to ring. This mode may also be used when the agent is subject to time charged calls.

2. Hold Mode: The agent dials in to the Office Extender and after the 'Log on' procedure remains connected for the duration of the ACD session. The agent's telephone 'bell' does not 'ring' as such. The Office Extender sends simulated distinctive ring sound to the agent's ear piece or speaker phone and the agent presses * * to answer. This is designed for applications with high or frequent call traffic, resulting in minimum call charges. If the agent accidentally hangs up or the connection is unintentionally released, the Office Extender automatically re-establishes the link by dialling up the agent's telephone number when the next call is presented by the ACD.

3. Call Back Hold Mode: This mode is essentially the same as the Hold mode described above but provides additional security. The agent dials in to the Office Extender and is requested to enter their Operator number and PIN. If valid, the Office Extender calls the agent back and requests that the PIN be re-entered before the agent is allowed to log on to the ACD.

4. Telecommuting Mode without 'Log on/off' prompts: This mode is similar to the Hold mode described above but has a broader application. It is designed more for the remote 'worker' (telecommuter) rather than the remote 'agent' (operator). The telecommuter dials in to the Office Extender and is simply requested to enter their Operator number and PIN number. If valid, the telecommuter is requested to standby for calls. The line may either be held open, or the tele-commuter may hang up. Either way, they will receive calls whenever the PABX extension is called. Please note that with this mode, the telecommuter is not requested to log on or off the ACD, even though this would still be possible if the Office Extender was connected to an ACD extension.

5. ACD Agent Mode without 'Log on/off' prompts: This mode is the same as the Telecommuting mode described above with only one exception. After the agent enters the Operator number and PIN number, the agent is automatically connected to PABX/ACD dial tone. When dial tone is heard, the agent enters a valid code to log on to the ACD. The agent then presses # # and can now hold the line open, or hang up. Again, either way, the agent will receive calls whenever the ACD extension is called, either by way of simulated ring tone or on a dial up basis.

6. Dial Mode without 'Log on/off' prompts: This mode of operation is similar to the Mode 1 described on the previous page. The tele-worker dials in to the Office Extender but is not requested to dial 1 or 0 to log on or off. This mode is designed for infrequent call traffic, or when the tele-worker is subject to time charged calls.

SYSTEM FEATURES

PIN Access Security

Unauthorised access to the Office Extender and PABX/ACD is prevented by Personal Identification Numbers (PINs) which are fully programmable by the system administrator.

Hybrid Voice Amplifier

The Extender has programmable insertion gain/attenuation, so that the volume of speech can be adjusted to suit both the operator and the calling party.

Distinctive Ringing

When a call is switched from the PABX/ACD to the Office Extender, distinctive ringing sound (in synchronisation with incoming ring voltage) is sent to the telecommuter by the Office Extender, indicating the presence and type of a call.

DTMF Control Codes

The telecommuter can control the Office Extender to go 'on hook' and 'off hook' as required, using standard DTMF codes, **or more easily by using the 'Home Interface Module'**.

Hook Flash

The telecommuter can signal the Office Extender to generate a hook flash (timed loop break) to access features of the PABX such as hold, recall, and three way calling.

Call Progress Detection

The Office Extender monitors call progress by detecting speech, silence, busy tone, dial tone, congestion tone, line reversal and loop current loss for the purpose of releasing the line when required.

Multi-User

The Office Extender stores up to eight different operator numbers and corresponding PIN and telephone numbers. This allows the one unit to be shared by a number of remote agents logging on for their respective shifts.

Remote Programming

The Office Extender is fully remotely programmable, from any DTMF telephone. Access to this feature is protected by a Master PIN.

Call Statistics

The Office Extender tallies up the total number of calls received, as well as the number of operator answered calls

Hold Tone

A single 'pip' is sent to the telecommuter every sixty seconds, when in holding pattern, to indicate that they are still connected to the Office Extender.

Standard Two Wire Ring In/Loop Out

The Office Extender has a Ringer Equivalent Number (REN) of 1 and appears as a normal two wire analogue telephone to both the PABX/ACD and the telephone exchange.

AUSTEL (and ACA) Permit

The Office Extender has AUSTEL approval (Permit Number A94/05/0234) in reference to the relevant technical and safety standards. Design Two Thousand's ACA supplier's code is N 468.

INSTALLATION

Power

The Office Extender can be powered by an approved 240 Vac/12 Vdc power adaptor (supplied). It is plugged into a 240 V mains power outlet and into the Extender power socket. Alternatively, the Office Extender may be powered from a 24 → 48V (nom.) supply.

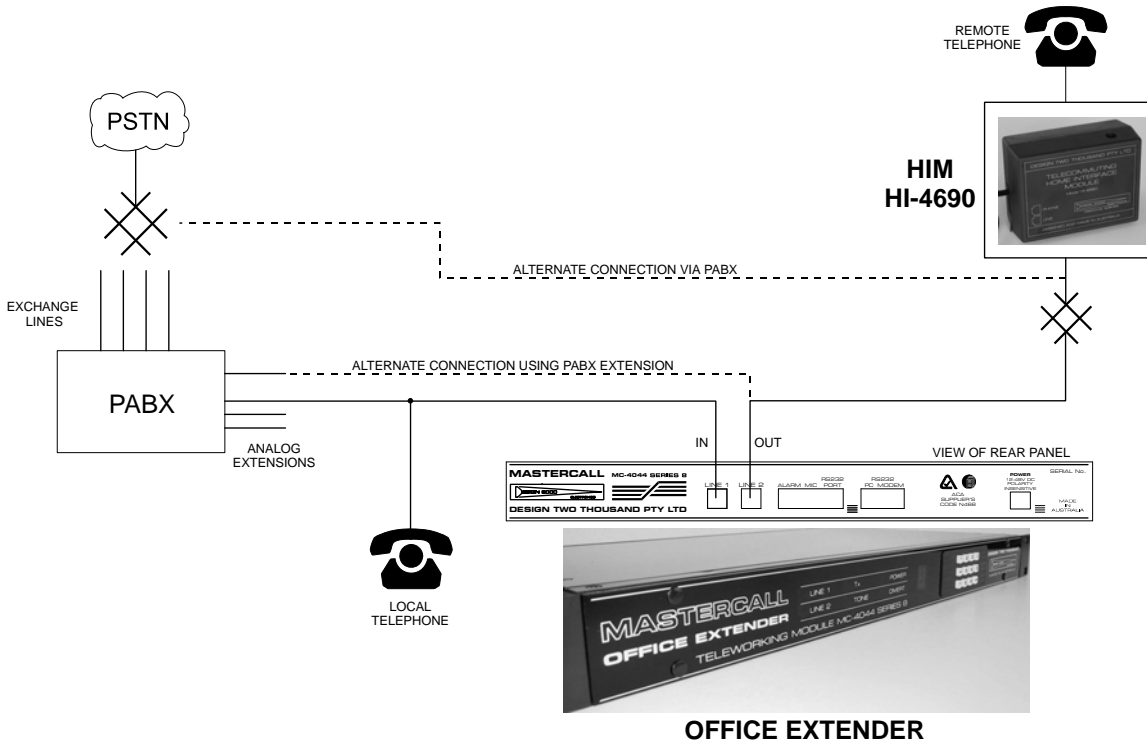
Line Connections

The Office Extender has two RJ12 line sockets. The two centre pins of the RJ12 are 'La' and 'Lb'.

Line 1 (IN) is connected to a PABX or ACD analogue extension.

Line 2 (OUT) is connected to a PSTN line or an analogue PABX extension with a directory number assigned to it (also referred to as Direct In Termination (DIT)).

OFFICE EXTENDER CONNECTION



Programming

The following parameters need to be programmed by the system administrator for the Office Extender to function as required:

Modes of Operation

The default mode of operation is programmed as follows. (It can also be programmed on a per operator basis when programming their PIN numbers and target telephone numbers).

Enable Dial Mode * 6703 # * 67 1 * #
Enable Hold Mode * 6703 # * 67 2 * #
Enable Call Back Hold Mode * 6703 # * 67 3 * #
Enable Telecommuting Mode * 6703 # * 67 4 * #
Enable ACD Agent Mode * 6703 # * 67 5 * # (Default)
Enable Dial Mode without prompts * 6703 # * 67 6 * #

Check Mode of Operation * 6703 # * 67 - m * *, where m = 1 - 6.

Programming PIN Numbers, Telephone (SOHO) Numbers and Mode of Operation per Operator

Up to eight different agents can be assigned to each Extender by way of their own PIN that corresponds to their mode of operation and remote telephone number. When an operator logs on with their PIN, the Extender automatically selects their telephone number for the purpose of 'Dial Mode' and re-connecting the remote agent in the 'Hold Modes'.

To load PIN Numbers and corresponding Telephone Numbers:

First PIN and Mode	* # 1 pppp # m	First Number	21 nnnn nnnn... #
Second PIN and Mode	* # 2 pppp # m	Second Number	22 nnnn nnnn... #
Third PIN and Mode	* # 3 pppp # m	Third Number	23 nnnn nnnn... #
Fourth PIN and Mode	* # 4 pppp # m	Fourth Number	24 nnnn nnnn... #
Fifth PIN and Mode	* # 5 pppp # m	Fifth Number	25 nnnn nnnn... #
Sixth PIN and Mode	* # 6 pppp # m	Sixth Number	26 nnnn nnnn... #
Seventh PIN and Mode	* # 7 pppp # m	Seventh Number	27 nnnn nnnn... #
Eighth PIN and Mode	* # 8 pppp # m	Eighth Number	28 nnnn nnnn... #

Note: m = 1 → 6 and must be pressed within two seconds after the #, otherwise the default setting will take effect.
When entering the telephone numbers you may enter *# = dialing pause, ** = *, ## = #.

Total Calls

Press 30 and the Office Extender displays the total number of calls received.
To clear the counter, press 30 *.

Operator Answered Calls

Press 3x, where x = Operator number (1-8) and the Office Extender displays the number of calls answered by that remote agent (operator).
To clear the counter, press 3x *.

Turn Off Extender

Press 1 and the Office Extender is turned off (idle). An agent or telecommuter that has a session up is disconnected, and the system is ready for access.

REMOTE CONTROL

All system programming functions can be performed from any telephone. This facility provides the system administrator with full remote control. Access to remote control is protected by a Master PIN which is initially loaded from the Extender Keypad.

To Load or Change the Master PIN Number

Press * # 0 mmmm #, where mmmm = Master PIN.

To Access Remote Control

1. Dial Line 2 of the Extender and wait for answer.
2. Press *.
3. Enter the Master PIN.
4. Program as you would from the keypad. Programming will be voice prompted.

MASTER RESET

Pressing * 67709600 # resets the Extender to the following conditions:

Mode of operation: ACD Agent mode 5

Operators	PIN numbers	Mode	Telephone Numbers:
1	1111	5	Off
2	2222	5	Off
3	3333	5	Off
4	4444	5	Off
5	5555	5	Off
6	6666	5	Off
7	7777	5	Off
8	8888	5	Off

USER OPERATION

These descriptions refer to user operation without the Home Interface Module (HIM). The HIM further simplifies operating procedures (See Operator Guide for HIM G/96084).

1. Dial Mode

The home agent logs on by dialling line 2 of the Extender, and waits for the voice prompt to enter Operator number and PIN. The agent then enters their number and PIN. If the PIN is invalid, the agent hears *“Error, invalid PIN, please re-enter...”* If the third attempt is still invalid, the call is disconnected. When a valid PIN is entered, the agent hears *“You are currently logged off, please press 1 if you wish to log on”*. If 1 is pressed, the agent hears *“Please enter your ACD Log On code”* followed by dial tone. The remote agent can then log in to the ACD just as a local agent would. The agent then presses # # and hears *“You are now logged on, thank you, please hang up”*. The Extender then calls the agent’s number each time an incoming call is received. The agent’s telephone rings as normal, and each call is answered in a normal manner, that is, picking up the handset and pressing * * to answer, and then pressing # # before replacing the handset at the end of the call.

2. Hold Mode

The remote agent logs on by dialling line 2 of the Extender, and waits for the voice prompt to enter Operator number and PIN. The agent then enters their number and PIN. If the PIN is invalid, the agent hears *“Error, invalid PIN, please re-enter...”* If the third attempt is still invalid, the call is disconnected. When a valid PIN is entered, the agent hears *“You are currently logged off, please press 1 if you wish to log on”*. If 1 is pressed, the agent hears *“Please enter your ACD Log On code”* followed by dial tone. The remote agent can then log in to the ACD just as a local agent would. The agent then presses # # and hears *“You are now logged on, please standby for a call to be put through, thank you”*. The Extender then sends a distinctive simulated ring sound to the agent each time an incoming call is received. The remote agent presses * * to answer the call and # # to release that call.

If the agent accidentally hangs up or the connection is unintentionally released, the Office Extender automatically re-establishes the link by dialling up the agent’s telephone number when the next call is presented by the ACD.

3. Call Back Hold Mode

The remote agent logs on by dialling line 2 of the Extender, and waits for the voice prompt to enter Operator number and PIN. The agent then enters their number and PIN. If the PIN is invalid, the agent hears *“Error, invalid PIN, please re-enter...”* If the third attempt is still invalid, the call is disconnected. When a valid PIN is entered, the agent hears *“You are currently logged off, please press 1 if you wish to log on”*. If 1 is pressed, the agent hears *“Thank you, please hang up”*. The Extender then calls the remote agent back and requests for the Operator number and PIN to be re-entered. After the valid PIN is re-entered, the agent hears *“Please enter your ACD Log On code”* followed by dial tone. The remote agent can then log in to the ACD just as a local agent would. The agent then presses # # and hears *“You are now logged on, please standby for a call to be put through, thank you”*. The Extender then sends a distinctive simulated ring sound to the agent each time an incoming call is received. The remote agent presses * * to answer the call and # # to release that call.

If the agent accidentally hangs up or the connection is unintentionally released, the Office Extender automatically re-establishes the link by dialling up the agent’s telephone number when the next call is presented by the ACD.

4. Telecommuting Mode without ‘Log on/off’ prompts

The telecommuter dials line 2 of the Extender, and waits for the voice prompt to enter Operator number and PIN. The telecommuter then enters their number and PIN. If the PIN is invalid, the telecommuter hears *“Error, invalid PIN, please re-enter...”* If the third attempt is still invalid, the call is disconnected. When a valid PIN is entered, the telecommuter hears confirmation *“bips”*. The Extender then sends distinctive simulated ring sound to the telecommuter each time an incoming call is received. The telecommuter presses * * to answer the call and # # to end that call. If the telecommuter hangs up or the connection is unintentionally released, the Office Extender automatically dials up the telecommuter’s telephone number when the next call is presented by the PABX. Therefore, there is no need for the telecommuter to ‘log off’ (# * #), unless they do not wish receive calls or until their shift is over.

5. ACD Agent Mode without ‘Log on/off’ prompts (Default)

The agent dials line 2 of the Extender, and waits for the voice prompt to enter Operator number and PIN. The agent then enters their operator number and PIN. If the PIN is invalid, the agent hears “*Error, invalid PIN, please re-enter...*” If the third attempt is still invalid, the call is disconnected. When a valid PIN is entered, the agent hears PABX/ACD dial tone and can enter the ACD log on code followed by # #. The agent then hears confirmation “bips”. The Extender then sends distinctive simulated ring sound to the agent each time an incoming call is received. The remote agent presses * * to answer the call and # # to end that call. If the agent hangs up or the connection is unintentionally released, the Office Extender automatically dials up the agent’s telephone number when the next call is presented by the PABX ACD. When the agent’s shift is over, they press * *, enter the ACD log off code, press # * #, and hang up.

6. Dial Mode without ‘Log on/off’ prompts

The home agent logs on by dialling line 2 of the Extender, and waits for the voice prompt to enter Operator number and PIN. The agent then enters their number and PIN. If the PIN is invalid, the agent hears “*Error, invalid PIN, please re-enter...*” If the third attempt is still invalid, the call is disconnected. When a valid PIN is entered, the agent hears dial tone. The remote agent can then log in to the ACD just as a local agent would. The agent then presses # # and hears “*Thank you, please hang up*”. The Extender then calls the agent’s number each time an incoming call is received. The agent’s telephone rings as normal, and each call is answered in a normal manner, that is, picking up the handset and pressing * * to answer, and then pressing # # before replacing the handset at the end of the call. When the agent’s shift is over, they press * *, enter the ACD log off code, press # * #, and hang up.

Control Codes During an Established Connection (All Modes)

Answer call	* *
Pick up line 1	* *
Hang Up line 1	# #
Hook Flash	* * (100 ms timed loop break on line 1)
Force release	# * * (Hang up Line 1 and Line 2 but remain logged on)
Clear down	# * # (Hang up Line 1 and Line 2 and end session)

TO LOG IN AND LOG OUT OF THE ACD

Refer to the PABX procedures for logging in and out of the ACD.

The Office Extender may be factory programmed to automatically log the caller in and out of the ACD by automatically dialling the appropriate log in/out commands at the time of Extender log on and log off (clear down). This will simplify the log in/out procedure.

As standard, remote agents can log OUT of the ACD as follows:

1. Dial Mode

- I. Repeat the Extender Log on Procedure as described.
- II. When PABX dial tone is heard, dial the appropriate command string to log out of the ACD. This could be programmed under a memory dial key of the phone.
- III. Wait a couple of seconds, press # * # to clear down the Extender, then hang up.

2. Hold Modes and ACD Agent Mode

- I. Press # # only if you are on a call and wish to terminate it.
- II. Press * * to pick up line 1 and obtain PABX dial tone.
- III. Dial the appropriate command string to log out of the ACD.
- IV. Wait a couple of seconds, press # * # to clear down the Extender, then hang up.

3. Telecommuting Mode

1. If the line is open to Office Extender:

- I. Press # * # to clear down the Extender, then hang up.

2. If your telephone is 'on hook':

- I. Dial line 2 of the Extender and enter your Operator and PIN number.
- II. Press # * # to clear down the Extender, then hang up.

TELECOMMUTING HOME INTERFACE MODULE HI-4690

Description

The Telecommuting Home Interface Module (HIM) is used in conjunction with the Office Extender for Telecommuting purposes.

Without a HIM, the Telecommuter keeps the connection from the home office to the main office PABX via the Office Extender by leaving the home phone 'off-hook'. The Telecommuter signals the Office Extender to go off-hook, on-hook and hook flash on the PABX extension using DTMF commands.

By using an 'on-hook' dialling speaker telephone without a HIM, the Telecommuter can maintain the connection to the main office PABX but will need to remember the dial commands that signal the Office Extender to answer, hang up and hook flash, and also remember not to actually hang up between calls if a continuous connection is required.

The Telecommuting Home Interface Module (HIM) solves these issues so that you can use the telephone like normal.

The HIM is situated at the Home Office and is connected in between the Telecommuter's telephone socket and telephone. The HIM now does the work of sending answer, hang up and hook flash commands automatically. As a result, the Telecommuter's job is made easier, where using an analogue telephone at the home office becomes exactly the same as in the main office.

When the Telecommuter is logged on for a working session and not on a call, the telephone can be placed on-hook. While the telephone is on hook, the HIM communicates with the Office Extender to hold the connection to the Home Office. When a call is presented to the telecommuter by the PABX or ACD, the Office Extender signals the HIM to ring. When the telephone is picked up, the HIM signals the Office Extender to loop the PABX extension. When the telephone is hung up, the HIM signals the Office Extender to hang up the PABX extension and keep the connection to the Extender in Hold Mode, or drop the connection in Dial Mode.

By utilising the HIM at the home office, the Telecommuter does not need to remember any special command codes and procedures, or to press special buttons to make and receive calls from the PABX.

SOHO Telephone	HIM	Automatic DTMF Signaling	Direction	Office Extender (Line 2)	PABX (Line 1)
On-hook	Off hook	A A	↔	Off-hook	On-hook
Ringing	Off hook	C	←	Off-hook	Ringing
Answer	Off hook	B	→	Off-hook	Off-hook
Hang up	Off hook	A A	→	Off-hook	On-hook
Off-hook	Off hook	B	→	Off-hook	Off-hook
Hook-flash	Hook flash	C C	→	Off-hook	Hook-flash
# * #	On hook	D	→	On-hook	On-hook

Operating Procedure

When first connecting the HIM, it will take about 30 seconds for the unit to initialize. During this period, any connected equipment must be 'on-hook'.

To Establish the Telecommuting Session

1. Dial the Extender and wait for answer.
2. Enter your Operator number and PIN.
3. Obtain dial tone and enter your ACD Log On code (if necessary).
4. Hang up.

To End the Telecommuting Session

1. Lift handset, wait for dial tone and dial your ACD Log Off code (if necessary).
2. Press # * #. Listen for "This telecommuting session is now over, goodbye". Repeat if necessary.
3. Hang up.

SPECIFICATIONS

Amplifier

Frequency Range	300 Hz to 3.4 kHz (-3dB).
Input - Output Impedance	220 ohm + 120 nF // 820 ohm (complex).
Return Loss	> 17 dB, 300 Hz to 3400 Hz.
Insertion Gain	20 dB +/- 2 dB maximum.
Output Level	-10 dBm → 0 dBm programmable.
Noise	< -50 dBm unweighted, 300 Hz to 3.4 kHz.
Method of operation	Software controlled AGC with noise discrimination.

Control Logic

Processor	Motorola 6809.
Random Access Memory	8K static.
Program Memory	32K byte EPROM.
Interface	8 bit latched data.
Number, Status & Option Storage	Electrically Erasable Programmable Read Only Memory (EEPROM).
Dialling	Pulse (Decadic) - Electronic, controlled by processor. 10 pps. 34/66 Mark/Space ratio. Tone (DTMF) -Electronic, controlled by processor. 70 ms on, 70 ms off.
Number Storage	1 → 8 phone numbers of up to 20 digits each (local, STD or IDD calls), programmable from Keypad or remotely by telephone.
Displays	Single digit 14mm 7 segment LED.
Power On	LED (Red).
Divert On	LED (Green).
Controls	12 button keyboard.

Voice Announcements

Voice Prompts and Announcements

Storage medium	EPROM.
Recording method	28K bit/sec ADPCM.
Personalised Voice Announcements (Optional)	
Storage medium	Linear EEPROM.
Recording method	Analogue DAST, time sampled at 8 kHz.
Record time	Up to 16 seconds x 2.

Detectors

Activity detector	
Sensitivity	Software adjustable.
DTMF detector	
Sensitivity	> -40 dB.
Detect time	> 50 ms.
Dial Tone detector	
Frequency range	380 Hz - 550 Hz.
Sensitivity	> 50 mV.

General

Power Input	12 V dc 1A (nom.) power adaptor (12 → 48 V working standard).
Power Consumption	Standby, 30mA (350 mW). Operating, typically 450 mA (5W).
Remote Control	'Touch Tone' DTMF telephone or encoder, with Talk-back.
Telecom Connection	Mode 1 (parallel) or mode 3.
Enclosure	Desk top, powder coated metal enclosure, or 19" 1 U Rack mount, powder coated metal enclosure
Dimensions Desk Top	W350mm x D240mm x H25 - 60mm.
Rack Mount	W19" x D250mm x H44mm.
Packed Weight	3 kg.
AUSTEL Permit No.	A94/05/0234
New Zealand Telepermit	PTC 212/96/014
ACA Supplier's Code	N 468



Please note:

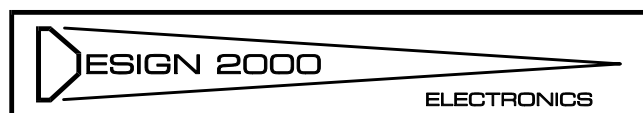
Specifications are subject to change without notice.

Ordering Codes:

Desk Top	4648 DSK
Rack Mount	4648 RAC
12 VDC 1A Power Adaptor	PP1
13.8 VDC Regulated 10A Supply	RPS-10138
Home Interface Module	HI-4690

MASTERCALL MC-4044 OFFICE EXTENDER

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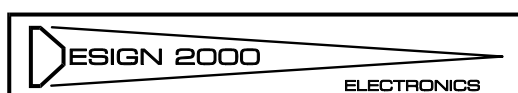
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THE OFFICE EXTENDER

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Total Calls	6
Operator Answered Calls	6
Turn Off Extender	6
Master Reset	6

SYSTEM CONFIGURATION CODES

Using either the Extender Keypad or by Remote Control, enter System access code * 67 03 #,listen for “*Please enter command*”

COMMANDS

* nn where nn is option code number

n = entry

= scroll down to next option number

* * = abandon (do not save any changes)

* # = store (save any changes)

After either storing or abandoning program changes you can continue to make other programming changes, press # # to end, or simply hang up.

OPTION	CODE	ENTRY	RESPONSE
TYPE OF DIALLING	* 61		“61 is n, please enter command”
Tone/Pulse Auto		1	1
<u>Tone (DTMF)</u>		2	2
Pulse (DEC)		3	3
TELEPHONE LINES	* 62		“62 is n, please enter command”
<u>Standard</u>		1	1
‘O pause’ PABX extensions L1 & L2		2	2
Exch L1, PABX L2		3	3
PABX L1, exch L2		4	4
SPARE	* 63		“63 is n, please enter command”
SILENCE DISCONNECT	* 64		“64 is n, please enter command”
n x 20 secs (eg. 8 x 20 = 160 secs)		8	8 (In increments of 20 secs up to 180 secs)
0 = unlimited (4 hrs)		0	0
CALL TIME LIMIT	* 65		“65 is n, please enter command”
n x 5 mins (eg. 8 x 5 = 45 mins)		8	8 (In increments of 5 mins up to 45 mins)
0 = unlimited (4 hrs)		0	0
H.I.M. MODE	* 66		“66 is n, please enter command”
<u>On</u>		1	1
Automatic		2	2
MODE OF OPERATION	* 67		“67 is n, please enter command”
Dial Mode		1	1
Hold Mode		2	2
Call Back Hold Mode		3	3
Telecommuting Mode		4	4
<u>ACD Agent Mode</u>		5	5
Dial Mode without Log on/off prompts		6	6
ANSWER DETECT MODE FOR CALL CONNECTION	* 68		“68 is n, please enter command”
<u>Connect on speech or cessation of valid ring tone</u>		1	1
Only connect on cessation of valid ring tone		2	2
Dial and connect		3	3

OPERATOR OVERRIDE	* 69	“69 is n, please enter command”	
<u>No</u>		1	1
Yes		2	2
DIAL TONE DETECT	* 70	“70 is n, please enter command”	
<u>5 sec wait for dial tone and re-loop if none</u>		1	1
3 sec wait for dial tone (blind dial)		2	2
CONTINUOUS TONE DISCONNECT	* 71	“71 is n, please enter command”	
<u>Keep connection on continuous tone</u>		1	1
Disconnect on continuous tone		2	2
LINE TEST FOR DISCONNECTION	* 72	“72 is n, please enter command”	
Loop break every 10 seconds of silence		1	1
<u>No loop break</u>		2	2
SPARE	* 73 & * 74	“73/74 is n, please enter command”	
CALL PROGRESS TEST NUMBERS	* 75	“75 is n, please enter command”	
<u>Off</u>		1	1
On		2	2
LINE REVERSAL/LOOP CURRENT LOSS DETECT	* 76	“76 is n, please enter command”	
Yes - for connect and disconnect		1	1
No		2	2
<u>Yes - for disconnect only</u>		3	3
Yes - for connect only		4	4
ERROR MESSAGE NUMBERS	* 77	“77 is n, please enter command”	
<u>Off</u>		1	1
On		2	2
SPARE	* 78	“78 is n, please enter command”	
BUSY COUNTER FOR DISCONNECTION	* 79	“79 is n, please enter command”	
1 → 8 bursts		7	7
MAX. RING VOLTAGE OFF TIME	* 80	“80 is n, please enter command”	
1 → 8 Seconds		6	6
RANDOM BUSY DETECT	* 81	“81 is n, please enter command”	
<u>Yes</u>		1	1
No		2	2
HOOK FLASH	* 82	“82 is n, please enter command”	
<u>100 ms</u>		1	1
250 ms		2	2
500 ms		3	3
1000 ms		4	4

(* 67 7096 00 # sets all options to the factory default, Extender responds “Thank you, please enter command”. Take care not to unintentionally enter this command !!!) Factory presets are Underlined. These can and should be changed to suit the application.

PHONE DETECTION AND AMPLIFIER CODES

Using either the MASTERCALL Keypad or by Remote Control, enter Tone Detection access code * 67 05 #, listen for "Please enter command"

COMMANDS

* nnwhere nn is tone parameter code number

nnn = entry

= scroll down to next tone parameter

* * = abandon (do not save any changes)

* # = store (save any changes)

After either storing or abandoning program changes you can continue to make other programming changes, press # # to end, or simply hang up.

AUSTRALIA

TONE PARAMETER	CODE	DEFAULT VALUE	PERIOD (ms)		RESPONSE
		ENTRY	Actual	Nominal	
BUSY OFF MIN	* 00007	224	225	"00 is nnn, enter command"	
BUSY OFF MAX	* 01019	544	550	"01 is nnn, enter command"	
BUSY ON MIN	* 02007	224	225	"02 is nnn, enter command"	
BUSY ON MAX	* 03019	544	550	"03 is nnn, enter command"	
NU OFF MIN	* 04010	320	320	"04 is nnn, enter command"	
NU OFF MAX	* 05020	640	640	"05 is nnn, enter command"	
NU ON MIN	* 06062	1984	2000	"06 is nnn, enter command"	
NU ON MAX	* 07094	3008	3000	"07 is nnn, enter command"	
RING 1 OFF MIN	* 08004	128	130	"08 is nnn, enter command"	
RING 1 OFF MAX	* 09008	256	260	"09 is nnn, enter command"	
RING 1 ON MIN	* 10008	256	260	"10 is nnn, enter command"	
RING 1 ON MAX	* 11015	480	480	"11 is nnn, enter command"	
RING 2 OFF MIN	* 12050	1600	1600	"12 is nnn, enter command"	
RING 2 OFF MAX	* 13075	2400	2400	"13 is nnn, enter command"	
RING 2 ON MIN	* 14008	256	260	"14 is nnn, enter command"	
RING 2 ON MAX	* 15015	480	480	"15 is nnn, enter command"	

Notes:

- Entry = tone length in milliseconds divided by thirty two unless otherwise noted
- There are eight values for RING TONE, thus allowing two OFF times and two ON times. Where only one OFF and/or ON time is required, set values for both RING 1 and RING 2 to the same. always set the RING 1 values to the shorter values when two tone lengths are involved.

AMPLIFIER PARAMETER CODE	DEFAULT VALUE	RESPONSE
SPARE		
	* 16 000	"16 is nnn, enter command"
DTMF Tx LEVEL		
	* 17 010 (000 = Off, 063 - 001)	"17 is nnn, enter command"
SPEECH CONNECT SENSITIVITY - Transitions prior to valid ring tone		
	* 18 005 (transitions)	"18 is nnn, enter command"
SPEECH CONNECT SENSITIVITY - Accumulated signal length of transitions in ms/32		
	* 19 018 (ms/32)	"19 is nnn, enter command"
SPEECH CONNECT SENSITIVITY - Transitions during valid ring tone		
	* 20 006 (transitions)	"20 is nnn, enter command"
DISCONNECT CODE		
	* 21 0-9, 11-18 (Consult factory)	"21 is nnn, enter command"
TONE DETECTOR SENSITIVITY (range 20 - 60) (Increasing value de creases sensitivity)		
	* 22 030	"22 is nnn, enter command"
BACKGROUND NOISE REJECTION (range 20 - 60) (Increasing value increases rejection, decrease for fax/data)		
	* 23 050	"23 is nnn, enter command"
OUTPUT LEVEL LINE 2 ('OUT') (range 034 - 063) (Increasing value increases output level)		
	* 27 042	"27 is nnn, enter command"
OUTPUT LEVEL LINE 1 ('IN') (range 034 - 063) (Increasing value increases output level)		
	* 28 042	"28 is nnn, enter command"
DUPLEX GAIN (range 20 - 40) (Increasing value increases duplex gain)		
	* 29 036	"29 is nnn, enter command"
AGC OUTPUT LEVEL (000 = off, range 060 - 100) (Increasing value increases automatic gain control)		
	* 30 000	"30 is nnn, enter command"

ACTIVITY CODES ON THE MONITOR DISPLAY

- 0. = Silence.
- 1. = Busy tone.
- 2. = Modulated dial tone.
- 3. = Number Unobtainable (NU).
- 4. = Speech.
- 5. = Steady tone.
- 6. = No progress or 'random' busy tone detected.
- 7. = Ring tone.
- 8. = Connecting caller to operator or loop current loss/line reversal.
- A. = Carrier tone to H.I.M.

STATUS LED

- Off = No session established.
- Slow flash = Session established but no call in progress.
- On = Session established and call in progress.
- Fast flash = Session established but telecommuter has hung up and will be redialled.

USER ERROR CODES

- 21 = Operator number one currently 'in session'.
- 22 = Operator number two currently 'in session'.
- 23 = Operator number three currently 'in session'.
- 24 = Operator number four currently 'in session'.
- 25 = Operator number five currently 'in session'.
- 26 = Operator number six currently 'in session'.
- 27 = Operator number seven currently 'in session'.
- 28 = Operator number eight currently 'in session'.

Note: The Office Extender can be programmed to allow other operators to take over the current session.

REMOTE CONTROL

All system programming functions can be performed from any telephone. This facility provides the system administrator with full remote control. Access to remote control is protected by a Master PIN.

To change the Master PIN Number (from the Extender Keypad)

Press * # 0 mmmm #, where mmmm = Master PIN.

To Access Remote Control

1. Dial Line 2 of the Extender and wait for answer.
2. Press *
3. Enter the Master PIN (default = 1234)
4. Program as you would from the keypad. Programming will be voice prompted.

To load PIN Numbers with corresponding Mode of Operation and Telephone Numbers:

First PIN	* # 1 pppp # m	First Number 21	nnnn nnnn... #
Second PIN	* # 2 pppp # m	Second Number 22	nnnn nnnn... #
Third PIN	* # 3 pppp # m	Third Number 23	nnnn nnnn... #
Fourth PIN	* # 4 pppp # m	Fourth Number 24	nnnn nnnn... #
Fifth PIN	* # 5 pppp # m	Fifth Number 25	nnnn nnnn... #
Sixth PIN	* # 6 pppp # m	Sixth Number 26	nnnn nnnn... #
Seventh PIN	* # 7 pppp # m	Seventh Number 27	nnnn nnnn... #
Eighth PIN	* # 8 pppp # m	Eighth Number 28	nnnn nnnn... #

Master PIN * # 0 pppp #

To check PIN Numbers and corresponding Telephone Numbers:

First PIN	* # 1 #	First Number 21 #
Second PIN	* # 2 #	Second Number 22 #
Third PIN	* # 3 #	Third Number 23 #
Fourth PIN	* # 4 #	Fourth Number 24 #
Fifth PIN	* # 5 #	Fifth Number 25 #
Sixth PIN	* # 6 #	Sixth Number 26 #
Seventh PIN	* # 7 #	Seventh Number 27 #
Eighth PIN	* # 8 #	Eighth Number 28 #

Master PIN * # 0 #

Total Calls

Press 30 and the Office Extender reports the total number of calls received.
To clear the counter, press 30 *.

Operator Answered Calls

Press 3x, where x = Operator number (1-8) and the Office Extender reports the number of calls answered by that remote agent (operator).
To clear the counter, press 3x *.

Turn Off Extender

Press 1 and the Office Extender is turned off (idle). Any agent or telecommuter that was in session is disconnected, and the system is ready for access.

MASTER RESET

Pressing * 67709600 # resets the Extender to the following conditions:

Mode of operation:
ACD Agent mode 5.

Operators:	PIN Numbers:	Telephone Numbers:	Operators:	PIN Numbers:	Telephone Numbers:
1	1111	Off	5	5555	Off
2	2222	Off	6	6666	Off
3	3333	Off	7	7777	Off
4	4444	Off	8	8888	Off

END OF DOCUMENT

OFFICE EXTENDER - TELECOMMUTING HOME INTERFACE MODULE HI-4690

Description

The Telecommuting Home Interface Module (HIM) is used in conjunction with the Office Extender for Telecommuting purposes.

Without a HIM, the Telecommuter keeps the connection from the home office to the main office PABX via the Office Extender by leaving the home phone 'off-hook'. The Telecommuter signals the Office Extender to go off-hook, on-hook and hook flash on the PABX extension using DTMF commands.

By using an 'on-hook' dialling speaker telephone without a HIM, the Telecommuter can maintain the connection to the main office PABX but will need to remember the dial commands that signal the Office Extender to answer, hang up and hook flash, and also remember not to actually hang up between calls if a continuous connection is required.

The Telecommuting Home Interface Module (HIM) solves these issues so that you can use the telephone like normal.

The HIM is situated at the Home Office and is connected in between the Telecommuter's telephone socket and telephone. The HIM now does the work of sending answer, hang up and hook flash commands automatically. As a result, the Telecommuter's job is made easier, where using an analogue telephone at the home office becomes exactly the same as in the main office.

When the Telecommuter is logged on for a working session and not on a call, the telephone can be placed on-hook. While the telephone is on hook, the HIM communicates with the Office Extender to hold the connection to the Home Office. When a call is presented to the telecommuter by the PABX or ACD, the Office Extender signals the HIM to ring. When the telephone is picked up, the HIM signals the Office Extender to loop the PABX extension. When the telephone is hung up, the HIM signals the Office Extender to hang up the PABX extension and keep the connection to the Extender in Hold Mode, or drop the connection in Dial Mode.

By utilising the HIM at the home office, the Telecommuter does not need to remember any special command codes and procedures, or to press special buttons to make and receive calls from the PABX.

SOHO Telephone	HIM	Automatic DTMF Signaling	Direction	Office Extender (Line 2)	PABX (Line 1)
On-hook	Off hook	A A	↔	Off-hook	On-hook
Ringing	Off hook	C	←	Off-hook	Ringing
Answer	Off hook	B	→	Off-hook	Off-hook
Hang up	Off hook	A A	→	Off-hook	On-hook
Off-hook	Off hook	B	→	Off-hook	Off-hook
Hook-flash	Hook flash	C C	→	Off-hook	Hook-flash
# * #	On hook	D	→	On-hook	On-hook

Operating Procedure

When first connecting the HIM, it will take about 30 seconds for the unit to initialize. During this period, any connected equipment must be 'on-hook'.

To Establish the Telecommuting Session

1. Dial the Extender and wait for answer.
2. Enter your Operator number and PIN.
3. Obtain dial tone and enter your ACD Log On code (if necessary).
4. Hang up.

To End the Telecommuting Session

1. Lift handset, wait for dial tone and dial your ACD Log Off code (if necessary).
2. Press # * #. Listen for "This telecommuting session is now over, goodbye". Repeat if necessary.
3. Hang up.

OFFICE EXTENDER

SIEMENS GEC COMMUNICATION SYSTEMS PTY LTD

DISA FACILITY (DESIGN TWO THOUSAND PTY LTD REF. No.: SCN 175)

If the first operator PIN is programmed to 9999 (see Operator Manual for Office Extender G/95072 Page 4), the Office Extender functions as a Direct Inward Station Access (DISA) unit.

When authorised users call into the Extender, they receive a special answer tone followed by internal PABX dial tone. The caller then dials * 51 followed by their Personal Identification Number (PIN). If the PIN is validated, the caller is then able to make calls to the Public Switched Telephone Network (PSTN).

At any time dial tone may be re-obtained by pressing * *, which enables follow-on calls to be made without the need to hang up and log on again. This is also a very useful feature if you miss-dial etc..

To end the session, simply hang up. The Extender will automatically release the lines ready for the next call.

OFFICE EXTENDER VOICE LINK

REMOTE PABX INTERFACE LI-4302 (SYSTEM DRAWING NUMBER 4759)

Description

The Telecommuting Home Interface Module (HIM) is commonly used in conjunction with the Office Extender for Telecommuting purposes.

Normally the Telecommuter is situated at a Small Office/Home Office (SOHO) where there is a single line telephone for voice calls.

Further applications for the Office Extender and the HIM exist where a PABX or Key System is at the remote end.

By using a HIM in conjunction with the Remote PABX Interface at the remote end, an Extender Voice Link connection similar to a 'Voice Link C' is created.

The Remote PABX Interface is situated at the Remote Office and is connected in between the HIM and a spare ring in/loop out 'Trunk' position on the PABX or Key System. The HIM does the work of sending answer, hang up and hook flash commands to the Office Extender as well as causing the Remote PABX Interface to send ringing voltage to the PABX as calls arrive. The Remote PABX Interface also provides the PABX with a 48 Volt line feed. As a result, a line on the Remote Office PABX remains connected to the Main Office PABX, over which calls can transferred to and then from the Remote Office.

When the Remote Office has an Extender Voice Link established but is not on a call to the main office, the Extender remote PABX 'Trunk' is placed 'on-hook'. While 'on-hook', the HIM communicates with the Office Extender to hold the PSTN connection between both offices. When a call is presented to the Remote Office by the main PABX or ACD, the Office Extender signals the HIM and Remote PABX Interface to ring the PABX. When the call is picked up from an extension, the HIM signals the Office Extender to loop the Main Office PABX extension. When the telephone extension that seized the 'trunk' at the remote end is hung up, the HIM signals the Office Extender to hang up the PABX extension at the Main Office and keep the PSTN connection to the Office Extender in Hold Mode, or drop the connection in Dial Mode.

Operating Procedure

When first connecting the HIM, it will take about 30 seconds for the unit to 'charge up'.

To Establish the Extender Voice Link

1. Dial the Office Extender and wait for answer.
2. Enter your Operator number and PIN.
3. Obtain dial tone and enter your ACD Log On code (if necessary).
4. Hang up.

To Disconnect the Extender Voice Link

1. Select the Extender Line Key, wait for dial tone and dial your ACD Log Off code (if necessary).
2. Press # * #. Listen for "This telecommuting session is now over, goodbye".
3. Hang up.

NOTES:

August 19, 1996

OFFICE EXTENDER

Disconnect Codes

The Office Extender is able to report the reason for the disconnection of the last call.

* 6705 #

* 21 - nn

* #

nn =

- 001 Busy tone
- 002 Dial tone
- 003 Number Unobtainable tone
- 004 Speech
- 005 Continuous tone
- 006 Random busy tone
- 007 Ring tone
- 008 Not Used
- 009 Not Used
- 000 Silence
- 011 Random busy tone
- 012 Stop Task
- 013 Loop current loss / line reversal detect
- 014 Forced disconnect ('D' from H.I.M. or # 59 # from user)
- 015 Silence
- 016 Continuous tone
- 017 In band tone (350 → 500 Hz)
- 018 Total time limit exceeded

CUSTOMNET SPECTRUM

TELECOMMUTING ACD AGENT

LOGIN PROCEDURES FOR REMOTE ANALOGUE ACD POSITIONS

To Establish Telecommuting Session from Remote Position

1. Press the 'SPKR' Key and then the 'START SESSION' Key.
(Same as dialling your Telecommuting Extender Number _____)
Wait for answer and follow the Voice Guides.
2. Enter Your Operator Number _____
3. Enter Your PIN Number _____
4. Listen for Dial Tone then:

To Log On to the ACD

5. Press the 'LOG ON' Key (same as dialling * 91) within five seconds of step 4.
6. Listen for Dial Tone and enter your Login PIN Number _____
 - Two beeps indicates successful procedure.
 - If unsuccessful, press the 'HANG UP' Key (same as dialling # #) followed by the 'ANSWER' Key (same as dialling * *) and try steps 4. and 5. again until successful.
7. Press the 'HANG UP' Key.

To Make Yourself Ready to Receive Calls

8. Press the 'ANSWER' Key.
9. Listen for dial tone and press the 'READY' Key (same as dialling # 92).
 - Two beeps indicates successful procedure.
10. Press the 'HANG UP' Key.
11. Wait for simulated ringing which indicates an incoming call.

To Answer Calls

1. When you hear the simulated ringing tone, press the 'ANSWER' Key and lift handset to take the call.
2. To end the call, press the 'HANG UP' Key followed by the 'SPKR' Key and replace handset.

To Stop Taking Calls but Remain in the ACD (eg. For a Convenience Break)

1. Press the 'ANSWER' Key and then the 'NOT READY' Key (same as dialling * 92).
2. Press the 'HANG UP' Key.

To Resume Taking Calls

1. Press the 'ANSWER' Key and then the 'READY' Key.
2. Press the 'HANG UP' Key.

To Log Off the ACD and End the Session

1. Press the 'ANSWER' Key and then the 'LOG OFF' Key (same as dialling # 91).
 - Two beeps indicates successful procedure.
2. Press the 'END SESSION' Key.
3. Listen for "This Telecommuting Session is now over, Goodbye"

IF IN DOUBT ABOUT BEING LOGGED ON, SIMPLY REPEAT STEPS 1 - 11 BUT YOU MAY NEED TO PRESS THE 'ANSWER' KEY AT STEP 4. TO OBTAIN DIAL TONE IF NECESSARY

NOTE:

If the Office Extender is not being used with a Home Interface Module (HIM), please enter the following from the Office Extender keypad:

*6703#

*66 2

*#

ATTN.: Neil Trattles, RACQ
07 3361 2183
07 3841 1048

OFFICE EXTENDER

Programming PIN Numbers and Telephone (SOHO) Numbers

Up to eight different agents can be assigned to each Extender by way of their own PIN that corresponds to their remote telephone number. When an operator logs on with their PIN, the Extender automatically selects their telephone number for the purpose of 'Dial Mode' and re-connecting the remote agent in the 'Hold Modes'.

To load PIN Numbers and corresponding Telephone Numbers:

First PIN	* # 1 pppp #	First Number	21 nnnn nnnn... #
Second PIN	* # 2 pppp #	Second Number	22 nnnn nnnn... #
Third PIN	* # 3 pppp #	Third Number	23 nnnn nnnn... #
Fourth PIN	* # 4 pppp #	Fourth Number	24 nnnn nnnn... #
Fifth PIN	* # 5 pppp #	Fifth Number	25 nnnn nnnn... #
Sixth PIN	* # 6 pppp #	Sixth Number	26 nnnn nnnn... #
Seventh PIN	* # 7 pppp #	Seventh Number	27 nnnn nnnn... #
Eighth PIN	* # 8 pppp #	Eighth Number	28 nnnn nnnn... #

Note: *# = dialing pause, ** = *, ## = #.

Also:

OPERATOR OVERRIDE	* 69	<i>"69 is n, please enter command"</i>
No	1	1
<u>Yes</u>	2	2

ie.

Enter

*6703#

*69 2

*#

Design Two Thousand Pty Ltd
Peter Zeug
06/01/00