

# **Telcom Research**

---

# **LP SERIES**

## **OEM Programming Manual**

Revised January 22, 2001  
By Brian Wepler

Entering Programming Mode.....	4
From a remote site.....	4
From the local telephone.....	4
About Password:.....	4
About Firmware Version:.....	5
About Programming Mode:.....	6
Standard Upload Features.....	6
Block Upload Features:.....	6
Standard Upload Features.....	7
System Parameters (Version 4xx000 to 4xx031 ).....	7
System Parameters (Version 4xx032-4xx046.007).....	9
System Parameters (Version 4xx046.008 – 4xx047.009).....	11
System Parameters (Version 4xx047.010 +).....	13
Programs.....	15
Bins.....	16
Search Tables.....	17
Misc. Functions.....	18
Block Features.....	19
Download of Parameter Block.....	20
Download of Programs.....	20
Download of Bins.....	20
Download Search Table.....	21
Download Holidays.....	22
Download Time Slots.....	22
Check of Parameter Block.....	23
Check of Programs.....	23
Check of Bins.....	23
Check Search Table.....	24
Check Holidays.....	24
Check Time Slots.....	24
Playback of Parameter Block.....	24
Playback of Programs.....	25
Playback of Bins.....	25
Playback Search Table.....	25
Playback Holidays.....	25
Playback Time Slots.....	26
Playback of Serial Number.....	26
Playback of Lot Number.....	26
Common Upload Features.....	27
Set Time.....	27
Set Day of Week.....	27
Set Julian Date.....	27
Misc. Functions.....	28
Histograms.....	29
Holidays.....	30
Matrix Search Table.....	31
Format.....	32
Block Search Table Hints.....	33
Hexadecimal to DTMF Translation.....	34
Program Number to DTMF Translation.....	35
Check Sum Calculation.....	36
Compatibility Information.....	37
JAZZTEL / GESICO General Specifications:.....	37
JAZZTEL / GESICO Included Features:.....	38
TELEPRIX General Specifications:.....	39

TELEPRIX Included Features: .....	40
CABLE General Specifications: .....	41
CABLE Included Features: .....	42
TELENEXO General Specifications: .....	43
TELENEXO Included Features: .....	44
828 General Specifications: .....	45
828 Included Features: .....	46
FLASH10 General Specifications: .....	47
FLASH10 Included Features: .....	48
RESIDENTIAL General Specifications: .....	49
RESIDENTIAL Included Features: .....	50
COMMERCIAL General Specifications: .....	51
COMMERCIAL Included Features: .....	52
UK General Specifications: .....	53
UK Included Features: .....	54

---

---

# Entering Programming Mode

## *From a remote site*

1. Place a call to the LPSeries Dialer
2. Wait for the user to answer the call
3. Transmit the DTMF tones '\*\*\*00\*#'
4. The LPSeries Dialer will enter programming mode and respond with the DTMF digit 'D'
5. If the dialer supports Password, and one is required, go to "About Password" below.

## *From the local telephone*

1. Go Off-Hook
2. Dial the DTMF tones '\*\*\*01\*#'
3. The LPSeries Dialer will enter programming mode and respond with the DTMF digit 'D'
4. If the dialer supports Password, and one is required, go to "About Password" below.

## ***About Password:***

Password is a feature supported by some software versions. It is required and verified when entering programming mode either locally or remotely, but is not required on a call home call.

If a password is required, the dialer will respond with the DTMF digit 'A'. You must begin to enter the correct password within 10 seconds.

If the correct password is sent, the dialer will respond with the DTMF digit 'D', and you are now in programming mode.

If the correct password is not entered, or a time out occurs, the dialer will respond with 'B' 'B' and then disconnect.

If the password is not known, then you will not be able to enter programming mode. However, we have implemented a '\*' RESET command. A technician can from the 'local telephone' only, press the '\*' key continuously for more than 6 seconds when prompted with the 'A' (for password) . The dialer will then accept this command as a 'RESET" command and proceed to reset the dialer to factory settings. At this point, the dialer will respond with a 'D' and you are now in programming mode. This is done to ensure that if a password is lost or corrupt, that the dialer can be reset and reused. This '\*' command is only available from the locally connected telephone, so there is no danger of anyone resetting and 'stealing' dialers remotely.

## **About Firmware Version:**

Once in programming mode, you can cause the dialer to play its Firmware Version by Transmitting 80\*#. The dialer will respond with a 6 digits number as follows:

4XXYYY

**4 = LP Series Dialer**

### **XX = OEM Version Description**

- 00 = JAZZTEL / GESICO (Standard Upload Features)
- 01 = TELEPRIX (Standard Upload Features)
- 02 = CABLE (Standard Upload Features)
- 03 = TELENEXO (Standard Upload Features)
- 10 = 828 (Standard Upload Features)
- 11 = FLASH10 (Standard Upload Features)
- 20 = JAZZTEL / GESICO (Block Upload Features)
- 21 = TELEPRIX (Block Upload Features)
- 22 = CABLE (Block Upload Features)
- 23 = TELENEXO (Block Upload Features)
- 31 = RESIDENTIAL (Block Upload Features)
- 32 = COMERCIAL (Block Upload Features)
- 33 = UK (Block Upload Features)
- 40 = 828 (Block Upload Features)
- 41 = FLASH10 (Block Upload Features)
- 91 = RESIDENTIAL (Standard Upload Features)
- 92 = COMERCIAL (Standard Upload Features)
- 93 = UK (Standard Upload Features)

Please see Appendix 'D' for Customer Specific compatibility information.

**YYY = Firmware revision level**

## About Programming Mode:

When in programming mode the LP Series Dialer will respond to commands transmitted as DTMF digits. Upon successful receipt of a programming command the LP Series Dialer will respond with a DTMF 'D'. If an error occurs, the LP Series Dialer will respond with two DTMF digits 'BB'.

The following is a list of programming commands available with:

### Standard Upload Features

Load System Parameters	9A6 <Packet of 126 DTMF Digits>CS
Load Search Tables	9A5 <Packet containing the entire Search Table>CS
Load Programs	9A2 <Packet of from 1 to all Programs> *# CS
Load Bins	9A8 <Packet of from 1 to all Bins> *# CS
Table Maintenance	9*2...
Read Peg Counts	0920*#
Clear Peg Counts	0921*#
Histogram Maintenance	090...
Play Serial Number	095*#
Play Programming	98x (x is the area to playback)
Master Reset	020*#
Set Time	071<Packet of HHMMSS>*#
Set Day of Week	072x*# (x is a number 1-7, with 1 = Monday)
Set Julian Date	073
Play Firmware Version	80*#
Exit Programming Mode	*#

The following is a list of programming commands available with:

### Block Upload Features:

Block Operation	9# <Block Packet>
Table Maintenance	9*2...
Read Peg Counts	0920*#
Clear Peg Counts	0921*#
Histogram Maintenance	090...
Master Reset	020*#
Set Time	071<Packet of HHMMSS>*#
Set Day of Week	072x*# (x is a number 1-7, with 1 = Monday)
Set Julian Date	073xxxxy (xxx is a number from 000 to 366 which is day of the year. yy is the last 2 digits of the year.)
Play Firmware Version	80*#
Exit Programming Mode	*#

**Note:** Not all commands are supported in all versions. Please see the compatibility list at the end of this document.

CS stands for Check Sum (See Appendix 'C').



<u>Packet</u>	<u>Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
040004000805050303	048	Tone Cadence #1 as LLLLHHHHTTAABBCCDD	
		LLLL = Low Frequency	0100 to 2000
		HHHH = High Frequency	0100 to 2000
		TT = Tolerance in Percent	05 to 75
		AA = On time 1 ( X 100mS )	00 to 99
		BB = Off time 1 ( X 100mS )	00 to 99
		CC = On time 2 ( X 100mS )	00 to 99
		DD = Off time 2 ( X 100mS )	00 to 99
040004000805050303	049	Tone Cadence #2 as LLLLHHHHTTAABBCCDD	
		LLLL = Low Frequency	0100 to 2000
		HHHH = High Frequency	0100 to 2000
		TT = Tolerance in Percent	05 to 75
		AA = On time 1 ( X 100mS )	00 to 99
		BB = Off time 1 ( X 100mS )	00 to 99
		CC = On time 2 ( X 100mS )	00 to 99
		DD = Off time 2 ( X 100mS )	00 to 99
00		Spare Parameter 0	
00		Spare Parameter 1	
00		Spare Parameter 2	
00		Spare Parameter 3	
00		Spare Parameter 4	
00		Spare Parameter 5	
00		Spare Parameter 6	
00		Spare Parameter 7	
00		Spare Parameter 8	
00		Spare Parameter 9	
CS		Check Sum	Calculated as per Appendix 'C'



## System Parameters (Version 4xx032-4xx046.007)

The following is an example packet and explanation:

```
9A603000606200604000400081450145012002005100#03028101900100000000001100001004000
400080505030304000400080505030308123456780000000000CS
```

<u>Packet</u>	<u>Old Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
9A6		Packet Identifier	
03	006	Failure Retries	00 to 10
00	021	Dialing Type	00 = Auto, 01 = DTMF, 02 = Pulse
06	026	DTMF On Time X 10mS	04 to 99
06	027	DTMF Off Time X 10mS	04 to 99
20	032	Release/Re-seize timer X 50mS	01 to 50
06	036	Ring Cadence X Seconds	01 to 09
0400040008	040	Dial Tone Detect (LLLL HHHH TT) LLLL = Low Frequency HHHH = High Frequency TT = Tolerance in Percent	0100 to 1600 0100 to 1600 05 to 75
1450145012	043	Tone Burst Detect (LLLL HHHH TT) LLLL = Low Frequency HHHH = High Frequency TT = Tolerance in Percent	0100 to 2000 0100 to 2000 05 to 75
00	052	In Dialing Type	00 = Both 01=DTMF 02=PULSE
20	053	Initial Inter-digit Time X Seconds	05 to 99
05	054	Inter-digit Timeout X Seconds	02 to 99
10	056	Initial User/Client Timeout X Seconds	02 to 99
0#	062	End Destination Digit	(0 +) 0123456789ABCD*#
03	0650	Centrex/PBX	00 to 05
0281	0651	PBX Access Code #1 as XXYY	
0190	0652	PBX Access Code #2 as XXYY	
0100	0653	PBX Access Code #3 as XXYY	
0000	0654	PBX Access Code #4 as XXYY	
0000	0655	PBX Access Code #5 as XXYY XX = Length YY = Entry	00 to 02 00 to 99
		The example for 0651 shows a 2 digit Access Code of '81' The example for 0652 shows a 1 digit Access Code of '9' The example for 0653 shows a 1 digit Access Code of '0'	
11	013	Call Home Mode as XY X is Call home time Y is Call home after power up	0 to 3 0 or 1
0000	015	Call home Day/Hour as DDHH DD = Call Home Day HH = Call Home Hour	01 to 99 00 to 23
10	018	Call home retry interval X 6 Minutes The example data of 10 would mean a retry of 60 minutes (1 hour)	01 to 99

<u>Packet</u>	<u>Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
040004000805050303	048	Tone Cadence #1 as LLLLHHHHTTAABBCCDD LLL = Low Frequency HHH = High Frequency TT = Tolerance in Percent AA = On time 1 ( X 100mS ) BB = Off time 1 ( X 100mS ) CC = On time 2 ( X 100mS ) DD = Off time 2 ( X 100mS )	0100 to 2000 0100 to 2000 05 to 75 00 to 99 00 to 99 00 to 99 00 to 99
040004000805050303	049	Tone Cadence #2 as LLLLHHHHTTAABBCCDD LLL = Low Frequency HHH = High Frequency TT = Tolerance in Percent AA = On time 1 ( X 100mS ) BB = Off time 1 ( X 100mS ) CC = On time 2 ( X 100mS ) DD = Off time 2 ( X 100mS )	0100 to 2000 0100 to 2000 05 to 75 00 to 99 00 to 99 00 to 99 00 to 99
08 12345678	009	Password Length Password	00 to 08 00000000 to 99999999
00		On Off Flags Bit 0 = Disable Flash Timer Bit 1 = Not Used Bit 2 = Not Used Bit 3 = Not Used Bit 4 = Not Used Bit 5 = Not Used Bit 6 = Not Used Bit 7 = Not Used	0 or 1 0 or 1 0 or 1 0 or 1 0 or 1 0 or 1 0 or 1 0 or 1
00		Spare Parameter 0	
00		Spare Parameter 1	
00		Spare Parameter 2	
00		Spare Parameter 3	
CS		Check Sum	Calculated as per Appendix 'C'

## System Parameters (Version 4xx046.008 – 4xx047.009)

The following is an example packet and explanation:

```
9A603000606200604000400081450145012002005100#03028101900100000000001100001004000
400080505030304000400080505030308123456780000000000CS
```

<u>Packet</u>	<u>Old Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
9A6		Packet Identifier	
03	006	Failure Retries	00 to 10
00	021	Dialing Type	00 = Auto, 01 = DTMF, 02 = Pulse
06	026	DTMF On Time X 10mS	04 to 99
06	027	DTMF Off Time X 10mS	04 to 99
20	032	Release/Re-seize timer X 50mS	01 to 50
06	036	Ring Cadence X Seconds	01 to 09
0400040008	040	Dial Tone Detect (LLLL HHHH TT) LLLL = Low Frequency HHHH = High Frequency TT = Tolerance in Percent	0100 to 1600 0100 to 1600 05 to 75
1450145012	043	Tone Burst Detect (LLLL HHHH TT) LLLL = Low Frequency HHHH = High Frequency TT = Tolerance in Percent	0100 to 2000 0100 to 2000 05 to 75
00	052	In Dialing Type	00 = Both 01=DTMF 02=PULSE
20	053	Initial Inter-digit Time X Seconds	05 to 99
05	054	Inter-digit Timeout X Seconds	02 to 99
10	056	Initial User/Client Timeout X Seconds	02 to 99
0#	062	End Destination Digit	(0 +) 0123456789ABCD*#
03	0650	Centrex/PBX	00 to 05
0281	0651	PBX Access Code #1 as XXYY	
0190	0652	PBX Access Code #2 as XXYY	
0100	0653	PBX Access Code #3 as XXYY	
0000	0654	PBX Access Code #4 as XXYY	
0000	0655	PBX Access Code #5 as XXYY XX = Length YY = Entry	00 to 02 00 to 99
		The example for 0651 shows a 2 digit Access Code of '81' The example for 0652 shows a 1 digit Access Code of '9' The example for 0653 shows a 1 digit Access Code of '0'	
11	013	Call Home Mode as XY X is Call home time Y is Call home after power up	0 to 4 0 or 1
0000	015	Call home Day/Hour as DDHH DD = Call Home Day HH = Call Home Hour	01 to 99 00 to 23
10	018	Call home retry interval X 6 Minutes The example data of 10 would mean a retry of 60 minutes (1 hour)	01 to 99

<u>Packet</u>	<u>Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
040004000805050303	048	Tone Cadence #1 as LLLLHHHHTTAABBCCDD LLL = Low Frequency HHH = High Frequency TT = Tolerance in Percent AA = On time 1 ( X 100mS ) BB = Off time 1 ( X 100mS ) CC = On time 2 ( X 100mS ) DD = Off time 2 ( X 100mS )	0100 to 2000 0100 to 2000 05 to 75 00 to 99 00 to 99 00 to 99 00 to 99
040004000805050303	049	Tone Cadence #2 as LLLLHHHHTTAABBCCDD LLL = Low Frequency HHH = High Frequency TT = Tolerance in Percent AA = On time 1 ( X 100mS ) BB = Off time 1 ( X 100mS ) CC = On time 2 ( X 100mS ) DD = Off time 2 ( X 100mS )	0100 to 2000 0100 to 2000 05 to 75 00 to 99 00 to 99 00 to 99 00 to 99
08 12345678	009	Password Length Password	00 to 08 00000000 to 99999999
00		Spare Parameter 0	
00		Call Home Minute	00 to 59
00		Spare Parameter 1	
00		Spare Parameter 2	
00		Spare Parameter 3	
CS		Check Sum	Calculated as per Appendix 'C'

## System Parameters (Version 4xx047.010 +)

The following is an example packet and explanation:

```
9A603000606200604000400081450145012002005100#03028101900100000000001100001004000
400080505030304000400080505030308123456780000000000CS
```

<u>Packet</u>	<u>Old Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
9A6		Packet Identifier	
03	006	Failure Retries	00 to 10
00	021	Dialing Type	00 = Auto, 01 = DTMF, 02 = Pulse
06	026	DTMF On Time X 10mS	04 to 99
06	027	DTMF Off Time X 10mS	04 to 99
20	032	Release/Re-seize timer X 50mS	01 to 50
06	036	Ring Cadence X Seconds	01 to 09
0400040008	040	Dial Tone Detect (LLLL HHHH TT) LLLL = Low Frequency HHHH = High Frequency TT = Tolerance in Percent	0100 to 1600 0100 to 1600 05 to 75
1450145012	043	Tone Burst Detect (LLLL HHHH TT) LLLL = Low Frequency HHHH = High Frequency TT = Tolerance in Percent	0100 to 2000 0100 to 2000 05 to 75
00	052	In Dialing Type	00 = Both 01=DTMF 02=PULSE
20	053	Initial Inter-digit Time X Seconds	05 to 99
05	054	Inter-digit Timeout X Seconds	02 to 99
10	056	Initial User/Client Timeout X Seconds	02 to 99
0#	062	End Destination Digit	(0 +) 0123456789ABCD*#
03	0650	Centrex/PBX	00 to 05
0281	0651	PBX Access Code #1 as XXYY	
0190	0652	PBX Access Code #2 as XXYY	
0100	0653	PBX Access Code #3 as XXYY	
0000	0654	PBX Access Code #4 as XXYY	
0000	0655	PBX Access Code #5 as XXYY XX = Length YY = Entry	00 to 02 00 to 99
		The example for 0651 shows a 2 digit Access Code of '81' The example for 0652 shows a 1 digit Access Code of '9' The example for 0653 shows a 1 digit Access Code of '0'	
11	013	Call Home Mode as XY X is Call home time Y is Call home after power up	0 to 4 0 or 1
0000	015	Call home Day/Hour as DDHH DD = Call Home Day HH = Call Home Hour	01 to 99 00 to 23
10	018	Call home retry interval X 6 Minutes The example data of 10 would mean a retry of 60 minutes (1 hour)	01 to 99

<u>Packet</u>	<u>Par #</u>	<u>Description</u>	<u>Acceptable Range</u>
040004000805050303	048	Tone Cadence #1 as LLLLHHHHTTAABBCCDD LLL = Low Frequency HHH = High Frequency TT = Tolerance in Percent AA = On time 1 ( X 100mS ) BB = Off time 1 ( X 100mS ) CC = On time 2 ( X 100mS ) DD = Off time 2 ( X 100mS )	0100 to 2000 0100 to 2000 05 to 75 00 to 99 00 to 99 00 to 99 00 to 99
040004000805050303	049	Tone Cadence #2 as LLLLHHHHTTAABBCCDD LLL = Low Frequency HHH = High Frequency TT = Tolerance in Percent AA = On time 1 ( X 100mS ) BB = Off time 1 ( X 100mS ) CC = On time 2 ( X 100mS ) DD = Off time 2 ( X 100mS )	0100 to 2000 0100 to 2000 05 to 75 00 to 99 00 to 99 00 to 99 00 to 99
08 12345678	009	Password Length Password	00 to 08 00000000 to 99999999
00		Spare Parameter	
00		Call Home Minute	00 to 59
00		Copy Bin Days	00 to 99
00		Copy Bin Destination	Any valid Bin #: 00-15
00		Spare Parameter	
CS		Check Sum	Calculated as per Appendix 'C'

## Programs

If the dialer has 10 programs, then the following is an example packet and explanation:

9A200860009399A0570099\*#CS

<u>Packet</u>	<u>Description</u>	<u>Acceptable Range</u>
9A2	Packet Identifier	
0	Program Number	See Appendix 'B'
08	Program Length	See Appendix 'A'
60009399	Program Instructions	
A	Program Number	See Appendix 'B'
05	Program Length	See Appendix 'A'
70099	Program Instructions	
*#	End of Packet Identifier	
CS	Check Sum	Calculated as per Appendix 'C'

You can transmit any or all of the Programs in this packet.

If the dialer has more than 10 programs, then the following is an example packet and explanation:

9A20008600093990A0570099\*#CS

<u>Packet</u>	<u>Description</u>	<u>Acceptable Range</u>
9A2	Packet Identifier	
00	Program Number	See Appendix 'B'
08	Program Length	See Appendix 'A'
60009399	Program Instructions	
0A	Program Number	See Appendix 'B'
05	Program Length	See Appendix 'A'
70099	Program Instructions	
*#	End of Packet Identifier	
CS	Check Sum	Calculated as per Appendix 'C'

You can transmit any or all of the Programs in this packet.

## ***Bins***

If the dialer has 10 Programs (yes I said Programs), then the following is an example packet and explanation:

9A80075551212503050\*#CS

<b><u>Packet</u></b>	<b><u>Description</u></b>	<b><u>Acceptable Range</u></b>
9A8	Packet Identifier	
0	Bin Number	See Appendix 'B'
07	Bin Length	See Appendix 'A'
5551212	Bin Digits	
5	Bin Number	See Appendix 'B'
03	Bin Length	See Appendix 'A'
050	Bin Digits	
*#	End of Packet Identifier	
CS	Check Sum	Calculated as per Appendix 'C'

You can transmit any or all of the bins in this packet.

If the dialer has more than 10 Programs (yes I said Programs), then the following is an example packet and explanation:

9A8000755512120503050\*#CS

<b><u>Packet</u></b>	<b><u>Description</u></b>	<b><u>Acceptable Range</u></b>
9A8	Packet Identifier	
00	Bin Number	See Appendix 'B'
07	Bin Length	See Appendix 'A'
5551212	Bin Digits	
05	Bin Number	See Appendix 'B'
03	Bin Length	See Appendix 'A'
050	Bin Digits	
*#	End of Packet Identifier	
CS	Check Sum	Calculated as per Appendix 'C'

You can transmit any or all of the bins in this packet.



## Search Tables

The following is an example packet and explanation:

9A5001285DDD01046DDD50200C5

<u>Packet</u>	<u>Description</u>	<u>Acceptable Range</u>
9A5	Packet Identifier	
0012	Packet Size – In this case 0x12 – 18	Integer Value
85DDD010	Table Entry	See Note 1
46DDD502	Table Entry	See Note 2
00	End of Table Marker	Must be 00
C5	Check Sum	Calculated as per Appendix 'C'

### Note 1:

The format of the first Table Entry is as follows:

8	Entry Type	8=Primary, 4=Secondary, 2=User, 1=Client
5	Entry Length (including Action Code)	3 to 17 See Note 3
DDD	Entry Digits ( ??? )	0,1,2,3,4,5,6,7,8,9,*,#
01	Action Code	01 to 10, 21 to 24
0	Fill character since all entries must be an even number of digits. Since this entry has a total of 7 digits, then an extra 0 is required to change its length to an even number of 8.	

### Note 2:

The format of the first Table Entry is as follows:

4	Entry Type	8=Primary, 4=Secondary, 2=User, 1=Client
6	Entry Length (including Action Code)	3 to 17 See Note 3
DDD5	Entry Digits ( ???5 )	0,1,2,3,4,5,6,7,8,9,*,#
02	Action Code	01 to 10, 21 to 24

### Note 3:

The **Entry Type** and **Entry Length** fields are actually combined. The following is a bit layout of these two fields

Field	Type	Length
Bit Position	3210	3210
	TTTT	LLLL
TTTT	= 1000 for Primary Entry	
	= 0100 for Secondary Entry	
	= 0010 for User Entry	Supported in 4xx047.006+
	= 0001 for Client Entry	Supported in 4xx047.006+
LLLL	= Entry Length - 0000 to 1111	( 0 to 15 )

PSXL LLLL

An example 15 Digit Primary Entry would be 1000 1111 = 9F.

## ***Misc. Functions***

### **Play Programming**

98x will cause the LP Series Dialer to playback its programming (Not all items are supported in all versions)

- x = 0 Play System Parameter Block
- x = 1 Play Programs
- x = 2 Play Bins
- x = 3 Play Misc.
  - HH – Hour
  - MM – Minute
  - SS – Second
  - CC – Call Home Mode
  - DD – Call Home Day
  - HH – Call Home Hour
  - MM – Call Home Minute
  - DD – Call Home Days Left
  - PP – Call Home Pending Timer
  - CC – Copy Bin Days Left
- X = 4 Play Search Table

# Block Features

## Block Operation Command of 9#

Format is as follows:

9# T X PP SS DDDDDDDD CS

**T = Operation Type**

- 1 = Download a Block of Data
- 2 = Calculate and Transmit Check Sum of a Block of Data
- 3 = Playback a Block of Data

**X = Block Type:**

- 1 = System Parameter Block
- 2 = Program
- 3 = Bins
- 4 = Search Table
- 5 = Holidays
- 6 = Time Slots
- E = Serial Number
- F = Lot Number

**PP = Item Number.**

**SS = Block Size**

**D = Data**

- Optional. Only used when 'T = 1'.

**CS = 8 Bit Check Sum with a 0x55 Seed.**

- Optional. Only used when 'T = 1'.

## ***Download of Parameter Block***

9# 1 1 00 80 <128 Digits (64 Bytes) of Data> CS

The **Operation Type** of '1' translates to Download.

The **Block Type** of '1' translates to Parameter Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '80' is hex, which is 128 digits (64 Bytes).

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

## ***Download of Programs***

9# 1 2 01 08 6000 93 99 CS

The **Operation Type** of '1' translates to Download.

The **Block Type** of '2' translates to Programs Block.

The **Item Number** of '01' means this data is for program '2' ( program 1 is 00)

The **Block Size** of '08' means the data to follow (the program) is '8' digits long.

The 6000 93 99 are the 8 digits of the program.

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

## ***Download of Bins***

9# 1 3 05 07 5551212 CS

The **Operation Type** of '1' translates to Download.

The **Block Type** of '3' translates to Bin Block.

The **Item Number** of '05' means this data is for bin '6' ( bin 1 is 00)

The **Block Size** of '07' means the data to follow (the bin) is '7' digits long.

The 5551212 are the 7 digits of the bin.

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

## **Download Search Table**

Search tables are split into blocks of 128 digits ( 64 bytes). These blocks are numbered from 00 up. You can download any block at any time. Each block does not need to be full 128 digits.

9# 1 4 00 80 DDDD CS

The **Operation Type** of '1' translates to Download.

The **Block Type** of '4' translates to Search Table Block.

The **Item Number** of '00' means this data is to be downloaded to the start of the search table.

The **Block Size** of '80' means the data is 128 digits long. (64 Bytes)

DDDD represents the 128 bytes of data destined for the search table.

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

9#1 4 01 4A DDDD CS

9#1 translates to Download.

The **Operation Type** of '4' translates to Search Table Block.

The **Item Number** of '01' means this data is to be loaded at the 2<sup>nd</sup> block ( start of search table + 128 bytes ).

The **Block Size** of '4A' means the data is 74 digits long. (37 Bytes)

DDDD represents the 128 bytes of data destined for the search table.

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

A search table entry is as follows:

XYEE1234567890

X = Entry Type

0x0 = Erased or Empty Entry

0x8 = Prefix Entry

0x4 = Country Code Entry

0x2 = City Code Entry

0x1 = Local Entry

Y = Entry Length

Valid numbers of 0x0 to 0xF. The length includes all digits of the entry, but do not include the XY digits.

EE = Represents the entry itself. These are the digits to be matched against what the user dialed.

12345678 = Action Codes

123 = Action Codes for Weekdays

1 = Program to run if call is placed in time slot #1

2 = Program to run if call is placed in time slot #2

3 = Program to run if call is placed in time slot #3

45 = Action Codes for Saturday

4 = Program to run if call is placed in time slot #1

- 5 = Program to run if call is placed in time slot #2
- 67 = Action Codes for Sunday
  - 6 = Program to run if call is placed in time slot #1
  - 7 = Program to run if call is placed in time slot #2
- 8 = Action Codes for Holidays

An entry of PREFIX type also has an 8-digit action code, however only the first 2 digits have meaning. For example:

8A 00 YZZZZZZZ

- 8 = Prefix Entry
- A = 10 Digit Entry Length
- 00 = Entry to Match
- Y = Next Search Type
  - 0x4 = Country Code Entry
  - 0x2 = City Code Entry
  - 0x1 = Local Entry
- Z = 7 '0' to fill out the action code to a total of 8 digits

## ***Download Holidays***

9# 1 5 00 18 DDD CS

The **Operation Type** of '1' translates to Download.

The **Block Type** of '5' translates to Holidays Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '18' is hex, which is 24 digits represents 12 bytes. These 12 Bytes are 6 integers containing 6 holidays expressed as a number from 0 to 366. The integers must be downloaded in Binary form. For example to download day 340, you would send as '0154'.

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

## ***Download Time Slots***

9# 1 6 00 1C DDD CS

The **Operation Type** of '1' translates to Download.

The **Block Type** of '6' translates to Time Slot Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '1C' is hex, which is 28 digits representing:

- 3 time settings for Week Days
- 2 time settings for Saturday
- 2 time settings for Sunday

Each time is in the form of HHMM and are binary. For example 6:30 PM (18:30) would be sent as 121E (12 is hex for 18, and 1E is hex for 30)

**CS** is the checksum of the block. This includes the Operation Type, Block Type, Item Number, Block Size and Data, and has a starting seed of 0x55.

For example, the Time Slots for a Week Day is as follows:

0800 1100 1700

Time Slot 1 = 23:00 to 07:59  
Time Slot 2 = 08:00 to 16:59  
Time Slot 3 = 17:00 to 22:59

## ***Check of Parameter Block***

9# 2 1 00 80

The **Operation Type** of '2' translates to Check  
The **Block Type** of '1' translates to Parameter Block.  
The **Item Number** of '00' is the only valid entry here.  
The **Block Size** of '80' is hex, which is 128 digits (64 Bytes).

This command will cause the LP to transmit the Check Sum for the Parameter Block.

## ***Check of Programs***

9# 2 2 01 00

The **Operation Type** of '2' translates to Check.  
The **Block Type** of '2' translates to Programs Block.  
The **Item Number** of '01' means this data is from program '2' ( program 1 is 00)  
The **Block Size** of '00' means the data to check is the length of the program. If anything but '00' is used, then only that number of digits will be checked.

This command will cause the LP to transmit the Check Sum for a given program.

## ***Check of Bins***

9# 2 3 05 00

The **Operation Type** of '2' translates to Check.  
The **Block Type** of '3' translates to Bin Block.  
The **Item Number** of '05' means this data is from bin '6' ( bin 1 is 00)  
The **Block Size** of '00' means the data to check is the length of the bin. If anything but '00' is used, then only that number of digits will be checked.

This command will cause the LP to transmit the Check Sum for a given bin.

## ***Check Search Table***

9# 2 4 00 80

The **Operation Type** of '2' translates to Check.

The **Block Type** of '4' translates to Search Table Block.

The **Item Number** of '00' means this data is to be checked is at the start of the search table.

The **Block Size** of '80' means the data is 128 digits long. (64 Bytes)

This command will cause the LP to transmit the Check Sum for a search table block.

## ***Check Holidays***

9# 2 5 00 18

The **Operation Type** of '2' translates to Check.

The **Block Type** of '5' translates to Holidays Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '18' is hex, which is 24 digits representing all of the holiday list.

This command will cause the LP to transmit the Check Sum for the Holiday Block.

## ***Check Time Slots***

9# 2 6 00 1C

The **Operation Type** of '2' translates to Check.

The **Block Type** of '6' translates to Time Slot Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '1C' is hex, which is 28 digits representing the times

This command will cause the LP to transmit the Check Sum for the Holiday Block.

## ***Playback of Parameter Block***

9# 3 1 00 80

The **Operation Type** of '3' translates to Playback

The **Block Type** of '1' translates to Parameter Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '80' is hex, which is 128 digits (64 Bytes).

This command will cause the LP to transmit the Parameter Block.



## ***Playback of Programs***

9# 3 2 01 00

The **Operation Type** of '3' translates to Playback.

The **Block Type** of '2' translates to Programs Block.

The **Item Number** of '01' means this data is from program '2' ( program 1 is 00)

The **Block Size** of '00' means the data to Playback is the length of the program. If anything but '00' is used, then only that number of digits will be Played.

This command will cause the LP to transmit the given program.

## ***Playback of Bins***

9# 3 3 05 00

The **Operation Type** of '3' translates to Playback.

The **Block Type** of '3' translates to Bin Block.

The **Item Number** of '05' means this data is from bin '6' ( bin 1 is 00)

The **Block Size** of '00' means the data to Playback is the length of the bin. If anything but '00' is used, then only that number of digits will be Played.

This command will cause the LP to transmit the given bin.

## ***Playback Search Table***

9# 3 4 00 80

The **Operation Type** of '3' translates to Playback.

The **Block Type** of '4' translates to Search Table Block.

The **Item Number** of '00' means this data is to be Played starting at the start of the search table.

The **Block Size** of '80' means the data is 128 digits long. (64 Bytes)

This command will cause the LP to transmit the given search table block.

## ***Playback Holidays***

9# 3 5 00 18

The **Operation Type** of '2' translates to Playback.

The **Block Type** of '5' translates to Holidays Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '18' is hex, which is 24 digits representing all of the holiday list.

This command will cause the LP to transmit the Check Sum for the Holiday Block.

## ***Playback Time Slots***

9# 3 6 00 1C

The **Operation Type** of '3' translates to Playback.

The **Block Type** of '6' translates to Time Slot Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '1C' is hex, which is 28 digits representing the times

This command will cause the LP to transmit the Holiday Block.

## ***Playback of Serial Number***

9# 3 E 00 00

The **Operation Type** of '3' translates to Playback.

The **Block Type** of 'E' translates to Serial Number Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '00' means the data to Playback is the length of the Serial Number. If anything but '00' is used, then only that number of digits will be Played.

This command will cause the LP to transmit the Serial Number Block.

## ***Playback of Lot Number***

9# 3 F 00 00

The **Operation Type** of '3' translates to Playback.

The **Block Type** of 'F' translates to Lot Number Block.

The **Item Number** of '00' is the only valid entry here.

The **Block Size** of '00' means the data to Playback is the length of the Lot Number. If anything but '00' is used, then only that number of digits will be Played.

This command will cause the LP to transmit the Lot Number Block.

## Common Upload Features

### ***Set Time***

The following is an example packet and explanation:

071140300\*#

<b><u>Packet</u></b>	<b><u>Description</u></b>	<b><u>Acceptable Range</u></b>
071	Packet Identifier	
14	Hour in 24 Hour clock	00 to 23 Depending on Month
03	Minutes	00 to 59
00	Seconds	00 to 59
*#	End of Packet	

### ***Set Day of Week***

The following is an example packet and explanation:

0723\*#

<b><u>Packet</u></b>	<b><u>Description</u></b>	<b><u>Acceptable Range</u></b>
072	Packet Identifier	
3	Day of Week (Wednesday)	1 to 7
*#	End of Packet	

### ***Set Julian Date***

The following is an example packet and explanation:

07324701\*#

<b><u>Packet</u></b>	<b><u>Description</u></b>	<b><u>Acceptable Range</u></b>
073	Packet Identifier	
247	Day of Year	001 to 366 (001 = January 1)
01	Year	00 to 99 (01 = 2001)
*#	End of Packet	

## ***Misc. Functions***

### **Version Number:**

80\*# will cause the LPSeries Dialer to respond with a 6 Digit Firmware Version Number.  
For example : '400001'.

### **Play Serial Number**

095\*# will cause the LPSeries Dialer to respond with an 8 Digit Electronic Serial Number.  
For example : '00128643'

### **Master Reset**

020\*# will cause the LP SERIES DIALER to reset all Parameters, Programs, Bins, and Search Tables to Factory Default.

# Histograms

An LPSeries Dialer histogram can record activity on each of the Routing Programs based on time of day. For each incoming and outgoing call, the dialer can record both the number of times each program is used as well as the total duration into a bin. The table below illustrates this. (Note: Duration is accumulated by the minute. Each call is rounded up or down to the nearest minute in before being added to the duration bin.

	Time Slot 1 Midnight to 7:59 AM		Time Slot 2 8:00:00 AM to 1:59 PM		Time Slot 3 2:00 PM to 5:59 PM		Time Slot 4 6:00 PM to Midnight	
<b>Histogram 0</b>	Count	Duration	Count	Duration	Count	Duration	Count	Duration
<b>Histogram 1</b>	Count	Duration	Count	Duration	Count	Duration	Count	Duration
<b>Histogram 2</b>	Count	Duration	Count	Duration	Count	Duration	Count	Duration
--	Count	Duration	Count	Duration	Count	Duration	Count	Duration
<b>Histogram 20</b>	Count	Duration	Count	Duration	Count	Duration	Count	Duration

Control of the histogram is done using the 090 command while in programming mode. The following is an explanation of the use of this command:

0900\*# = Clear all 21 Histograms

0901\*# = Play all 21 Histograms as follows:

AAAA BBBB CCCC DDDD EEEE FFFF GGGG HHHH #

... 20 more strings of digits representing the 20 remaining histograms

AAAA = Count for Time Slot 1 in HEX (Integer)

BBBB = Duration for Time Slot 1 in HEX (Integer)

CCCC = Count for Time Slot 2 in HEX (Integer)

DDDD = Duration for Time Slot 2 in HEX (Integer)

EEEE = Count for Time Slot 3 in HEX (Integer)

FFFF = Duration for Time Slot 3 in HEX (Integer)

GGGG = Count for Time Slot 4 in HEX (Integer)

HHHH = Duration for Time Slot 4 in HEX (Integer)

# = Delimiter

0902\*# = Play only Histograms with data (non-zero) as follows:

02 \* AAAA BBBB CCCC DDDD EEEE FFFF GGGG HHHH #

... Followed by additional strings of digits for any histograms that have data.

02 = Histogram Number 1 in HEX (char)

\* = Delimiter

AAAA = Count for Time Slot 1 in HEX (Integer)

BBBB = Duration for Time Slot 1 in HEX (Integer)

CCCC = Count for Time Slot 2 in HEX (Integer)

DDDD = Duration for Time Slot 2 in HEX (Integer)

EEEE = Count for Time Slot 3 in HEX (Integer)

FFFF = Duration for Time Slot 3 in HEX (Integer)

GGGG = Count for Time Slot 4 in HEX (Integer)

HHHH = Duration for Time Slot 4 in HEX (Integer)

# = Delimiter

0903XX\*# = Play Histogram XX (00 to 20) as follows:  
AAAA BBBB CCCC DDDD EEEE FFFF GGGG HHHH #

AAAA = Count for Time Slot 1 in HEX (Integer)  
BBBB = Duration for Time Slot 1 in HEX (Integer)  
CCCC = Count for Time Slot 2 in HEX (Integer)  
DDDD = Duration for Time Slot 2 in HEX (Integer)  
EEEE = Count for Time Slot 3 in HEX (Integer)  
FFFF = Duration for Time Slot 3 in HEX (Integer)  
GGGG = Count for Time Slot 4 in HEX (Integer)  
HHHH = Duration for Time Slot 4 in HEX (Integer)  
# = Delimiter

Histogram 0 is reserved for collection of information about incoming calls. The other 20 histograms are available for use by the programmer via the 84XXY. This command when placed in a program is used as follows:

84XXY

XX = Histogram Number (01 to 20)

Y = Action to take

1 = Increment the Count Only

2 = Accumulate Duration Only

3 = Increment the Count and Accumulate Duration

4 = Stop Accumulating Duration (Optional, since hanging up the phone will automatically stop accumulating time.

## Holidays

The holiday feature currently only works with the Matrix Table feature, and requires the Julian Date feature. Holidays are a list of up to 6 days of the year (in Julian Day of Year Format) that are defined as holidays. The Matrix Table makes use of this information to determine routing.

Holiday 1
Holiday 2
Holiday 3
Holiday 4
Holiday 5
Holiday 6

Each Holiday is stored in HEX as an integer. Please see Block Upload for more information on uploading a list of Holidays.

When a call is placed, the current Julian Day of Year is compared to the numbers in this list. If a match is found, then today is determined to be a holiday. The Matrix Table in determining how a call will be routed uses this information.

## Matrix Search Table

The Matrix Search table is a new way of looking at routing a call. When a user picks up the telephone to place a call, the time of call and date is recorded for future use. When the user starts to place the call, the LP Series Dialer Searches through the table for **PREFIX** entries. When a match has been found, the PREFIX entry defines what type of search to do next. It might be COUNTRY, CITY or LOCAL. The dialer will then look for a match for entries only of that type. For example look at the following partial search table:

Entry Type	Entry Digits	Action Code
PREFIX	00	COUNTRY
PREFIX	0?	CITY
PREFIX	??	LOCAL
COUNTRY	33	123 45 67 8

If the user picks up the telephone and dials 00335551212, the dialer will search for a PREFIX entry, and will find a match on '00' and change its search to a COUNTRY search. The dialer then continues to search for a match on digits after the prefix match and will find a COUNTRY entry of 33, which will match. At this point, then dialer will run one of 8 programs based on time of day, and day of the week. The day of the week will be condensed into Weekday, Saturday, Sunday, or Holiday. The time of day is compared to the Matrix Time Slots (See Download of Time Slots) to determine what time slot the call was placed in.

In the example, the 123 45 67 8 entry has the following meaning:

123 = Programs to run on a weekday.

1 = Program to run if the call was placed during time slot #1

2 = Program to run if the call was placed during time slot #2

3 = Program to run if the call was placed during time slot #3

45 = Programs to run on Saturday.

4 = Program to run if the call was placed during time slot #1

5 = Program to run if the call was placed during time slot #2

67 = Programs to run on Sunday.

6 = Program to run if the call was placed during time slot #1

7 = Program to run if the call was placed during time slot #2

8 = Program to run on a Holiday, regardless of the time the call was placed.

## **Format**

The following is a detailed layout of a matrix table entry:

AB CCCCC DDD EE FF G

A = Entry Type

8 = PREFIX

4 = COUNTRY

2 = CITY

1 = LOCAL

0 = EMPTY or ERASED

B = Entry Length - Length in Digits (Nibbles) of the entry.

C = Entry Digits to match

DDD = Program to Run on a Weekday in Time Slot 1,2 and 3 respectively

EE = Program to Run on a Saturday in Time Slot 1 and 2 respectively

FF = Program to Run on a Sunday in Time Slot 1 and 2 respectively

G = Program to Run on a Holiday

### **Here are a few examples:**

**8A 00 12 34 56 78** (Spaces between digits indicate byte boundaries)

8 = PREFIX ENTRY

A = 10 Digits Long

00 = Entry to match against

123 = Program to Run on a Weekday in Time Slot 1,2 and 3 respectively

45 = Program to Run on a Saturday in Time Slot 1 and 2 respectively

67 = Program to Run on a Sunday in Time Slot 1 and 2 respectively

8 = Program to Run on a Holiday

**4B 33 41 23 AB CD E0** (Spaces between digits indicate byte boundaries)

4 = COUNTRY ENTRY

B = 11 Digits Long

334 = Entry to match against

123 = Program to Run on a Weekday in Time Slot 1,2 and 3 respectively

AB = Program to Run (10,11) on a Saturday in Time Slot 1 and 2 respectively

CD = Program to Run (12,13) on a Sunday in Time Slot 1 and 2 respectively

E = Program (14) to Run on a Holiday

0 = Unused lower nibble of the last byte.



## Block Search Table Hints

When **Block** uploading a search table to the LPSeries Dialer you first must build up the entire search table as a block, then split the table up into 128 digit blocks for uploading. When building the block, you should sort the entries by length first. Then if space permits, insert some empty entries of each length.

An empty 2-digit Matrix Search Table entry would be

0AFF00000000

0 = EMPTY ENTRY

A = 10 Digits Long

FF = Entry to match against (Not Normally Valid)

000 00 00 0 = Programs to run.

An empty 2-digit Standard Search Table entry would be

04FF00

0 = EMPTY ENTRY

4 = 4 Digits Long

FF = Entry to match against (Not Normally Valid)

00 = Program to run.

As an example if you have 10 2-digit entries, add about 2 empty 2-digit entries. If you have 20, 3-digit entries add about 4 empty 3-digit entries and so on.

After you initial upload of a search table to an LPSeries Dialer, you will be able to modify that table with very little communications time. Lets say that after uploading a dialer, you determine that you need to add a new 2 digit entry. You can simply use the first empty 2-digit entry and change it to a valid entry. Since you are replacing an entry (empty entry) with an entry (new 2 digit entry), the actual size of the entire table remains the same, and the position of each entry has not changed. This will allow you to do a block upload of only the 128-digit block were that change occurred. If the change spans a 128 Digit boundary, then you would of course need to upload two blocks.

If you did not place empty entries in the original table, then to add an entry would mean that all data in the search table from the point of the new entry until the end of the table would have changed (or moved). This would require you to upload many more blocks to the dialer, since many more would have changed.

Careful planning and use of this feature can greatly reduce the amount of time required to update search tables, both Standard type and Matrix type.

## Appendix 'A'

### Hexadecimal to DTMF Translation

<u>Hex Value</u>	<u>DTMF digit</u>
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
A	A
B	B
C	C
D	D
E	*
F	#

Examples:

<u>Hex Value</u>	<u>DTMF digit</u>
00	00
4E	4*
7F	7#
AE	A*

## Appendix 'B'

### Program Number to DTMF Translation

<u>Program Number</u>	<u>DTMF Number in Packet</u>
1	0
2	1
3	2
4	3
5	4
6	5
7	6
8	7
9	8
10	9
21	A
22	B
23	C
24	D

## Appendix 'C'

### Check Sum Calculation

The Check Sum is 2 DTMF digits representing a value from 0x00 to 0xff (00 to ##).

The check sum is calculated using all of the data in the packet including the terminating \*# if present. The checksum does not include the actual programming command.

To calculate the Check Sum, start with a value of 0x55. Then ADD the numeric value of each digit in the packet. If the value of the check sum exceeds 255, then subtract 255 from check sum and continue.

For example the check sum of a packet containing 1234 is 5#

Starting Value		55
Add	1	56
Add	2	58
Add	3	5B
Add	4	5F

A value of 5F is transmitted as 5# (See Appendix 'A' for Hex to DTMF Translation).

## Appendix 'D'

### Compatibility Information

#### ***JAZZTEL / GESICO General Specifications:***

<b>Parameter</b>	<b>Info</b>	<b>Note</b>	<b>Included</b>
Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	15	10 Routing Programs + 5 Basic (21-25)	X
Program Digits	80	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	21	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **JAZZTEL / GESICO Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	X
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	X
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	
Tone Detection	Program Instruction 50 and 52	
Tone Cadence	Program Instruction 56	
DTMF Detection	Program Instruction 51	
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	
Go-To / Restart	Program Instruction 35 and 36	
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	
Centrex Compatibility	Program Instruction 63	
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	

## **TELEPRIX General Specifications:**

Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	40	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	21	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **TELEPRIX Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	X
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	X
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	
Tone Detection	Program Instruction 50 and 52	
Tone Cadence	Program Instruction 56	
DTMF Detection	Program Instruction 51	
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	
Centrex Compatibility	Program Instruction 63	
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	



### **CABLE General Specifications:**

Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	40	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	21	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **CABLE Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	X
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	X
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	
Tone Detection	Program Instruction 50 and 52	
Tone Cadence	Program Instruction 56	
DTMF Detection	Program Instruction 51	
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	
Centrex Compatibility	Program Instruction 63	
Test Time of Day	Program Instruction 88	
Test Day of Week	Program Instruction 85	
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	X
Set Time	Command 071	X
Set Day of Week	Command 072	
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	

## **TELENEXO General Specifications:**

<b>Parameter</b>	<b>Info</b>	<b>Note</b>	<b>Included</b>
Table Size	25 Blocks	3200 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	8 Digits		X
Number of Programs	21	16 Routing Programs + 5 Basic (21-25)	X
Program Digits	30	Maximum Digits per Program	X
Number of Bins	N/A		
Bin Digits	N/A	Maximum Digits per Bin	
Call Home Bin	N/A	Bin available for use by the Call Home Program	
Call Home Mode	0	Call Home Mode of Operation	X
Call Home Dial Type	Tone	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	4	Weekday; Saturday; Sunday; Holiday	X
Matrix Table Time Slots	3,2,2,1	Weekday=3; Saturday=2; Sunday=2; Holiday=1	X
Holidays	6	Space to Hold 6 Days in Julian Format	X

## **TELENEXO Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	
Matrix Search Table	Matrix table with multiple digit Op-Code	X
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	
Simple Call Home	Uses Call Home Program(s) only	X
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	X
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	X
Tone Detection	Program Instruction 50 and 52	
Tone Cadence	Program Instruction 56	
DTMF Detection	Program Instruction 51	
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	
Centrex Compatibility	Program Instruction 63	
Test Time of Day	Program Instruction 88	
Test Day of Week	Program Instruction 85	
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	
Set Time	Command 071	X
Set Day of Week	Command 072	
Set Julian Date	Command 073	X
Table Maintenance	Command 9*2	X

## 828 General Specifications:

Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	40	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	0	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## 828 Included Features:

Feature	Note	Included
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	X
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	X
Peg Counts	One Peg Count per Routing Program + 1	X
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	X
Tone Detection	Program Instruction 50 and 52	X
Tone Cadence	Program Instruction 56	X
DTMF Detection	Program Instruction 51	X
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	X
Centrex Compatibility	Program Instruction 63	X
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	X
Copy Bin	Copy from one bin to another after a preset time period	X
Ring Program (Auto Answer)	Allows use of	X
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	X
Table Maintenance	Command 9*2	

## **FLASH10 General Specifications:**

Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	56	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	14	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	0	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **FLASH10 Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	X
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	X
Peg Counts	One Peg Count per Routing Program + 1	
Histogram	Program Instruction 84	X
Play Parameters	See documentation	
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	X
Tone Detection	Program Instruction 50 and 52	X
Tone Cadence	Program Instruction 56	X
DTMF Detection	Program Instruction 51	X
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	X
Centrex Compatibility	Program Instruction 63	X
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	X
Copy Bin	Copy from one bin to another after a preset time period	X
Ring Program (Auto Answer)	Allows use of	X
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	



## **RESIDENTIAL General Specifications:**

Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	40	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	0	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **RESIDENTIAL Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	
Simple Call Home	Uses Call Home Program(s) only	X
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	
Tone Detection	Program Instruction 50 and 52	X
Tone Cadence	Program Instruction 56	
DTMF Detection	Program Instruction 51	X
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	
Centrex Compatibility	Program Instruction 63	
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	X
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	X
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	

## **COMMERCIAL General Specifications:**

Table Size	18 Blocks	2304 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	40	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	10	Bin available for use by the Call Home Program	X
Call Home Mode	0	Call Home Mode of Operation	X
Call Home Dial Type	Pulse	Tone or Pulse	X
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **COMMERCIAL Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	
Histogram	Program Instruction 84	
Play Parameters	See documentation	
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	
Tone Detection	Program Instruction 50 and 52	X
Tone Cadence	Program Instruction 56	X
DTMF Detection	Program Instruction 51	X
User Override	Allow user to access the phone even when doing a call home	
Extension busy	Monitor for an extension telephone off hook	
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	X
Centrex Compatibility	Program Instruction 63	X
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	X
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	X
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	

## UK General Specifications:

Table Size	20 Blocks	2560 Digits (Each Block is 128 Digits)	X
Table Op-Code Size	2 Digits		X
Number of Programs	25	20 Routing Programs + 5 Basic (21-25)	X
Program Digits	40	Maximum Digits per Program	X
Number of Bins	10		X
Bin Digits	20	Maximum Digits per Bin	X
Call Home Bin	N/A	Bin available for use by the Call Home Program	
Call Home Mode	N/A	Call Home Mode of Operation	
Call Home Dial Type	N/A	Tone or Pulse	
Copy From Bin	N/A	Bin used by Bin Copy Feature	
Password Digits	8	Maximum Length of a Password	X
Off Hook Recognition Time	200mS	Time a Phone must be continuously Off-Hook	X
Pulse Inter-digit time	900mS	Time between Pulse Digits	X
Pulse On Time	65mS	On-Hook time of a Pulse digit Pulse	X
Pulse Off Time	35mS	Off-Hook time of a Pulse digit Pulse	X
Number of Histogram Slots	N/A	Histograms to record use of each program	
Histogram Time Slots	N/A	Time Slots per program	
Matrix Table Time Days	N/A	Weekday; Saturday; Sunday; Holiday	
Matrix Table Time Slots	N/A	Weekday=3; Saturday=2; Sunday=2; Holiday=1	
Holidays	N/A	Space to Hold 6 Days in Julian Format	

## **UK Included Features:**

<b>Feature</b>	<b>Note</b>	<b>Included</b>
Standard Search Table	Standard Table with a 2 digits Op-Code (Program to Run)	X
Matrix Search Table	Matrix table with multiple digit Op-Code	
Pulse Dial In	Allow the use of a Pulse telephone as well as Tone Telephone	X
Full Call home	Uses Call Home Program(s) and Call Home Bin 10	
Simple Call Home	Uses Call Home Program(s) only	
Dual Call Home	Uses Call Home Programs 24 and 25 Alternately	
Peg Counts	One Peg Count per Routing Program + 1	X
Histogram	Program Instruction 84	
Play Parameters	See documentation	X
Beeps	Program Instruction 77	X
Subroutines	Program Instruction 37 and 38	X
Tone Detection	Program Instruction 50 and 52	X
Tone Cadence	Program Instruction 56	X
DTMF Detection	Program Instruction 51	
User Override	Allow user to access the phone even when doing a call home	X
Extension busy	Monitor for an extension telephone off hook	X
Pulse / Tone Switch	Program Instruction 20 and 21	X
Go-To / Restart	Program Instruction 35 and 36	X
Unverified User Client	Program Instruction 61, 62, 71, 72	
Verified User Client	Program Instruction 40, 41, 61, 62, 71, 72	
Centrex Compatibility	Program Instruction 63	
Test Time of Day	Program Instruction 88	X
Test Day of Week	Program Instruction 85	X
Insert / Delete Digits	Program Instruction 81 and 82	X
Turn on Dial Tone	Program Instruction 75	X
Copy Bin	Copy from one bin to another after a preset time period	
Ring Program (Auto Answer)	Allows use of	
Set Time	Command 071	X
Set Day of Week	Command 072	X
Set Julian Date	Command 073	
Table Maintenance	Command 9*2	