CALLER ID TELEPHONE PRODUCTION TESTER
MODEL 3500

User's Manual

Revision 2.2

January 2002

Part Number 3750108

CALLER ID TELEPHONE
PRODUCTION TESTER
MODEL 3500

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Important Safety Instructions

The following safety instructions apply to the Model 3500 Caller ID Telephone Production Tester:

1. Read and follow all warning notices and instructions marked on the product or packaging, or included in the manual.
2. The Model 3500 should not be operated in environments where the ambient temperature exceeds 50° C (122° F). Care should also be given to ensure that adequate air circulation is available.
3. The Model 3500 is designed for indoor use only. Temperature and other outdoor conditions can damage the system.
4. Should the case need to be opened for any reason, a suitable grounding device, such as a heel or foot grounder or a wrist strap, must be utilized. This will control the risk of damaging components through Electro-Static Discharge (ESD).
5. Do not attempt to service this product yourself. Refer all servicing to Rochelle Communications or an Authorized Rochelle Distributor, Dealer, or Agent (see service information, pp. 2-3).
6. Use only the included power adapter. Use of other power adapters voids the product warranty and can damage the system.
7. Equipment grounding is vital to ensure safe operation of the Model 3500. Prior to connecting a power cord to the power adapter, use an outlet tester or a voltmeter to check the AC receptacle for the presence of earth ground. If the receptacle is not properly grounded, do not connect the power adapter until a qualified electrician has corrected the problem.

Product Warranty

- Rochelle Communications, Inc. warrants that the Model 3500 Caller ID Telephone Production Tester will be free from defects in material and workmanship under normal installation for a period of one (1) year from the date of original purchase.
- The obligation of Rochelle, under this warranty, shall be limited to repair or replacement (at our option) during the warranty period. Any part which proves to be defective in material workmanship under normal installation, use, or service, is covered under the warranty, provided the product is returned to an Authorized Rochelle Distributor, Dealer, or Agent. TRANSPORTATION OR SHIPPING CHARGES ARE NOT THE RESPONSIBILITY OF ROCHELLE.
- The above warranty shall not apply to defects resulting from: misuse, abuse, neglect, accident, destruction, alteration of the serial number, operation outside of the environmental specifications for the product, improper electrical voltages or currents, unauthorized modifications, and repair, alteration, or maintenance by any person other than Rochelle Authorized Distributors, Dealers, or Agents.
- This warranty is in lieu of all other expressed warranties, obligations, or liabilities. Rochelle makes no expressed or implied warranties regarding the quality, merchantability, or fitness for a particular purpose beyond those that appear in the applicable manual.
- In no event will Rochelle be liable for any special, incidental, consequential or punitive damages for breach of this warranty, expressed or implied, including, but not limited to, loss of profits or damages to business or business relations.

Warranty Service

- To obtain warranty service, products must be returned to Rochelle or to an Authorized Rochelle Distributor, Dealer, or Agent. All product returns require a Return Material Authorization (RMA).
- Customer shall prepay shipping charges for products returned to Rochelle for warranty service. Rochelle shall pay shipping charges associated with the return of the serviced products to the customer. However, Rochelle cannot assume liability for duties and taxes for products returned to customers located outside the USA.

Address for Service

Rochelle Communications, Inc.
Attn: Product Service Department
8906 Wall Street, Suite 205
Austin, Texas 78754

Out of Warranty Service

- Rochelle will either repair or, at its option, replace a defective product not covered under warranty.
- Repair charges are available from the Product Service Department upon request. Out-of-Warranty repair charges are based upon the prices in effect at the time of the return.
- The warranty on a serviced product is 90 days measured from the date of service.

Rochelle Customer Service

When contacting Rochelle Customer Service, make sure to have the following information available:

- Product name and model
- Front panel firmware version
- Software release
- BIOS version
- Operating system and version
- User-installed software and any other modifications
- Description of the problem

NOTE	The front panel firmware version and the software release can be displayed on the LCD using the DisplayVersion script command. A script using this command can be launched by pressing the 'TEST 2' button with DOS mode selected. BIOS and operating system information are displayed during the booting process on a connected VGA monitor.

Contact Info
Customer Service

Telephone +1 512.339.8188
Facsimile (FAX) +1 512.339.1299
e-mail techsupport@rochelle.com

Contact Info
Product News
Software Upgrades

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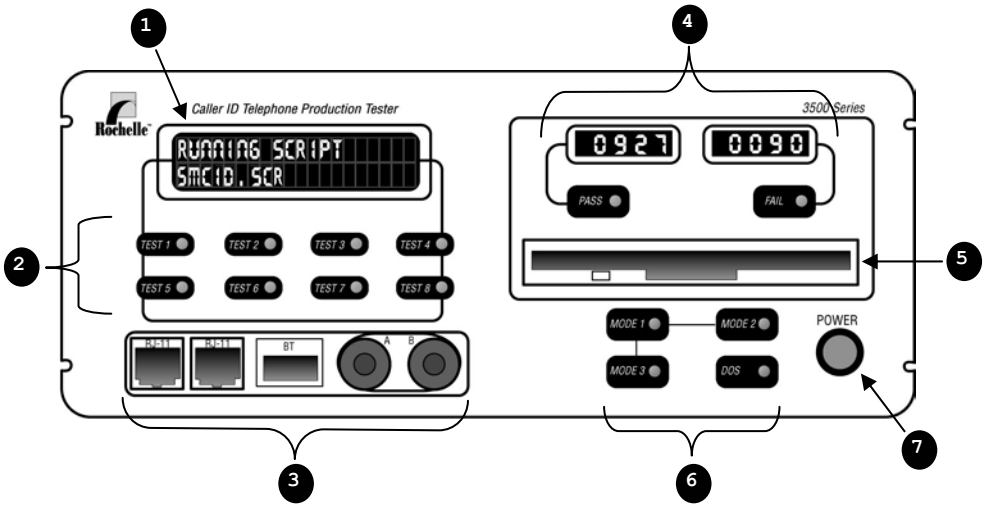
The Caller ID Telephone Production Tester, Model 3500, is a stand-alone, portable tester designed to test virtually any telecommunications device in a production environment. The motherboard includes the electronics of an Analog Services Telephone Line Simulator (ASTLS), Model 3410 and an x86 PC subsystem. Easy operation is provided through a simple, user-friendly interface which includes an LCD, mode selector and test launch buttons, pass/fail counters, and testing ports. Test files such as scripts developed using the Rochelle Script Language (RSL), DOS batch files, or programs (.exe) developed using C or Basic are loaded into the system and launched with the push of a button.

User Interface (Front Panel)



1. Display (LCD)

The 2 line x 20 character Vacuum Fluorescent Display presents status messages to indicate events such as system self test, mode selection, and test launch and completion. There are also script commands that enable script-specific messages to be displayed on the LCD.

Product Description

2. Test Launch Buttons

The test launch buttons, labeled ‘TEST 1’ through ‘TEST 8’ are used to launch the corresponding test based on the selected mode.

3. Test Ports

Two RJ-11 ports and 1 set of banana jacks (A represents 'tip' and B represents 'ring') are included on the front panel for connecting devices under test.

4. Pass/Fail Buttons and Counters

Upon completion of a test, the user can press either the pass or fail button to log the test results; the corresponding counter increments with each press of the button.

5. Floppy Drive (B:)

The 3.5" floppy drive is used to load test files into the system. Test files may be scripts developed using the Rochelle Script Language, executables, or batch files.

NOTE	A pre-loaded batch file, launched by pressing the 'TEST 4' button with DOS mode selected, copies the script files from a floppy disk to the appropriate functional directory on the C: drive (see Loading Test Files, p. 16).

6. Mode Selector Buttons

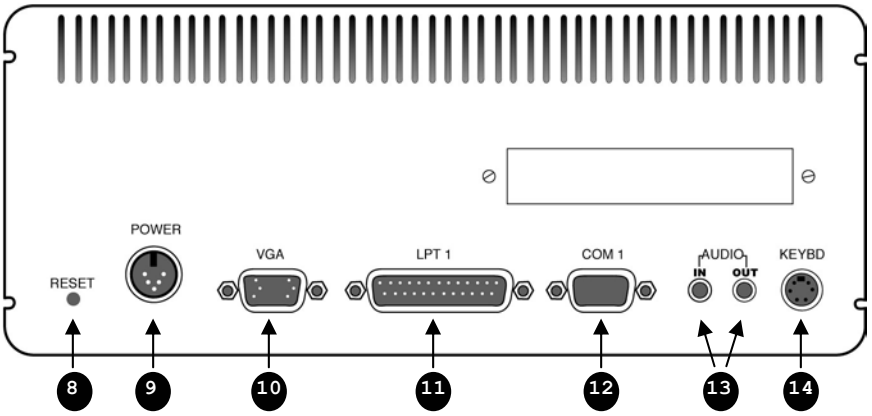
The mode selector buttons, labeled 'MODE 1', 'MODE 2', 'MODE 3', and 'DOS' are used to select the active mode. The different modes provide a convenient way of organizing test files. For example, tests related to a feature phone may be launched from MODE 1, while tests related to a Caller ID display unit may be launched from MODE 2.

7. Power Button

The power button turns the system on and off.

NOTE	See the Getting Started section for important information on connecting the power adapter and booting the system.

I/O and Reset (Rear Panel)



8. Reset (not supported on newer models)

The reset button may be used to warm boot the system, similar to simultaneously pressing <CTRL>, <ALT>, and <DEL> on a PC keyboard.

9. Power Input

The included power adapter is plugged into the connector labeled 'POWER' on the rear panel.

NOTE	See the Getting Started section for important information on connecting the power adapter and booting the system.

10. VGA Output

The connector labeled 'VGA' is a standard 15-pin VGA output. Any VGA or SVGA monitor may be plugged into this connector.

11. LPT 1 (Parallel I/O)

The connector labeled 'LPT 1' is a standard 25-pin parallel port for use in connecting a printer to the system.

12. COM 1 (Serial I/O)

The connector labeled 'COM 1' is a standard 9-pin serial port set by default as communications port 1 (COM 1). Various peripheral devices may be connected to this port.

NOTE	COM 2 is used by the PC subsystem to communicate to the front panel.

13. Audio In and Out

Two 1/8" jacks, labeled 'AUDIO IN' and 'OUT', are provided for connecting various audio devices to either inject or monitor audio.

14. Keyboard Input

The connector labeled 'KEYBD' is a standard 6-pin PS/2 keyboard input. Any PS/2 style keyboard may be plugged into this connector.

PC/104 Connector

The 3500 includes a PC/104 connector which may be used to expand the capabilities of the system. PC/104 devices such as: modems, serial and parallel I/O, analog and digital I/O (data acquisition), Ethernet, video, and disk controllers, audio, and many others are available from several third-party vendors. For more information on PC/104, refer to the/PC 104 Consortium web page at http://www.pc104.org.

The 3500 is capable of accommodating up to two (2) 8-bit or 16-bit PC/104 cards within the case. Special connectors are available to extend contacts for two cards through the opening on the rear panel

Operating System

The preinstalled operating system on the 3500 is a limited version of Caldera DR-DOS v. 7.02 Release 1 (http://www.caldera.com). A subset of the standard DOS commands and utilities is available as listed below.

Installed Commands and Utilities

Batch			
autoexec	echoeserr	Help	return
call	delltree	If	shift
echo	for	Pause	switch
echoes	gosub	pauseerr	wait
echoerr	goto	Rem	
Dos			
append	del	Keyb	rename
break	delq	Lh	rendir
cd	dir	Label	share
chcp	diskcomp	loadhigh	sort
chdir	emm386	More	set
cls	era	Md	time
copy	eraq	Mkdir	type
ctty	erase	Mem	tree
command	exit	Mode	ver
chkdsk	edit	Rmdir	verify
date	format	Path	vol
dosbook	fdisk	prompt	vdisk
debug	hiload	Print	xdel
diskcopy	filelink	Rd	xcopy
doske	himem		

Command.com

The floppy disk labeled 'Caldera DR-DOS Operating System' contains the standard DR DOS 7.02 command.com (i.e., bootable files). It is larger in size compared to the DR DOS command.com installed on the system. The installed command.com does not contain support for help messages which makes it smaller in size, but does not impair its functionality.

Help

The floppy disk labeled 'Caldera DR-DOS Documentation' contains a DR-DOS help utility called DOSBOOK. It is recommended that users run DOSBOOK from the floppy drive in order to conserve space on the C: drive.

The help command is only available for the 8-MB or higher 3500 Model.

To run DOSBOOK:

1. Activate PC Keyboard mode (see p. 14).
2. Insert the floppy.
3. Enter 'DOSBOOK' at the B: prompt.

Directory Structure

Proper operation of the 3500 is dependent on a pre-configured directory structure. The mode selector buttons on the front panel: MODE 1, MODE 2, MODE 3, and DOS each corresponds to a *functional directory* located on the C: drive. The directories are referred to as functional directories because they are necessary for the 3500 to function properly. Functional directories should neither be renamed nor removed.

Functional Directories
C:\mode1
C:\mode2
C:\mode3
C:\dos
C:\system
C:\menu

All system programs are stored in the C:\SYSTEM directory.

System Programs

Several programs are pre-loaded on the 3500. The main program is named FP.EXE. This is the program that operates the front panel user interface, and compiles and runs test files. The other files that are stored in the C:\SYSTEM directory are used by FP.EXE to enable certain script commands used for FAX testing and audio functions (e.g., play and record). The system programs and their related functions are as follows:

Program	Function
DOCTOFAX.EXE	This program, in conjunction with FAX.FNT, converts text documents into fax format for both the FAXVGA and SFAX programs.
FAX.FNT	Used by DOCTOFAX.EXE to convert text documents into fax format.
FAXVGA.EXE	This program, in conjunction with HUFFMAN.DAT, HUFFMANB.DAT, and HUFFMANW.DAT, displays fax format files on a VGA monitor.
FP.EXE	Operates the front panel user interface, and compiles/runs test files (e.g., scripts, executables, and batch files).
GREETING.MSG	Sample audio file.
HUFFMAN.DAT HUFFMANB.DAT HUFFMANW.DAT	Used by FAXVGA to display fax format files on a VGA monitor.
PLAY.EXE	This program plays properly formatted audio files through both the 1/8” audio output and the test ports (e.g., telephone handset).
RECORD.EXE	This program records audio through either the 1/8” audio input or the test ports (e.g., telephone handset).
RFAX.EXE	This program answers a call from a FAX device under test and provides all the necessary handshaking in order to properly receive a fax on the 3500.
SFAX.EXE	This program provides the CNG tones and all necessary handshaking in order to send a FAX from the 3500 to a FAX device under test.
COMPILE.SCR	This program compiles script files (.SCR) for faster execution by the Front Panel application. Compiled scripts have the file extension name .CMP.
DINFO.EXE	This utility will verify the type and firmware version of the DiskOnChip (Drive C).

DOS Mode Utilities

The 3500 ships with four pre-loaded DOS mode utilities that perform various system maintenance and administration functions. These utilities are launched by pressing the corresponding ‘TEST #’ button with DOS mode selected. The DOS mode utilities and their functions are as follows:

Button	File Name	Title	Function
TEST 1	test1.scr	Reset Counters	Resets the PASS and FAIL counters on the front panel.
TEST 2	test2.scr	Display Version	Displays the front panel firmware version and the FP.EXE release number.
TEST 3	test3.bat	Copy	Copies test files from directories on the floppy (B:) to corresponding directories on the C: drive.
TEST 4	test4.bat	Load Tests	Copies test files from directories on a floppy disk to the functional directories on the system according to assignments made in a file called asgndir.bat.
TEST 5	test5.bat	Admin Procedure	Launches support and maintenance programs (e.g., software upgrades) from a floppy disk.
TEST 6	test6.bat	Admin Procedure	Launches support and maintenance programs (e.g., software upgrades) from a floppy disk.
TEST 8	test8.bat	Admin Procedure	Launches support and maintenance programs (e.g., software upgrades) from a floppy disk.

NOTE Copy, Load Tests, and Admin Procedure are protected to prevent them from being inadvertently deleted. Therefore, test files named test3.bat, test4.bat, or test8.bat cannot be copied to the DOS functional directory.

Sample Test Files

Several sample test files (all developed using the Rochelle Script Language) are pre-loaded into the various functional directories on the C: drive. These tests have been pre-compiled (using the COMPILE application) for faster execution. The test file titles and their respective modes and test launch buttons are as follows:

Mode	Button	Title
1	TEST 1	5 Type I Caller ID Calls.
1	TEST 2	5 Type I Caller ID Calls with variable FSK Levels and SNR
1	TEST 3	Ring Level and Frequency Test
1	TEST 4	Type II Caller ID Test
1	TEST 5	Callback (Redial) Feature Test
1	TEST 6	Audio Example
1	TEST7	DTMF Digit Analysis (Requires DSP/104 Card)
2	TEST 1	DTMF Generation Test
2	TEST 2	Ring Detect Tests
2	TEST 3	Caller ID Type I and Type II Tests
2	TEST 4	Dial Pulse (PASS/FAIL)
2	TEST 5	DTMF Digit Test (PASS/FAIL) - Requires DSP/104 Card
2	TEST 6	BT Caller ID Simulation
2	TEST8	General Burn-in Test
3	TEST 1	Visual Message Waiting Test
3	TEST 2	FAX Send and Receive Test
3	TEST 3	Japan Caller ID
3	TEST 4	Answering Machine – DTMF Detection and Rejection
3	TEST 5	Answering Machine – Dial Tone Detection
3	TEST 6	UK Caller ID and Answering Machine demo

NOTE See the Sample Front Panel Scripts section for a listing of the sample test files. that are pre-loaded in the Front Panel subdirectories

What's Included

Each 3500 ships with:

Main System Unit
Power Adapter
Power Cord
User's Guide
3 Floppy Disks (Recovery diskettes)

Connecting the Power Adapter

Before connecting the power adapter, please read the Safety Instructions on p. 1.

To connect the power adapter:

1. Insert the power adapter cord with the 'TOP' label facing up into the connector labeled 'POWER' on the rear panel.
2. Insert the power cord into the receptacle end of the power adapter.

NOTE	Use only the power adapter that came with the system. Use of other power adapters voids the product warranty and can damage the system.

Booting the System

To boot the 3500:

1. Press the button labeled 'POWER' on the front panel.

   As the system boots, the display will show:

   POWER-ON TEST
   PLEASE WAIT

   Once the system is finished booting, the display shows:

   READY

If a problem is encountered during the booting process, the display shows:

POWER-ON FAILURE
PLEASE POWER OFF

NOTE	While simultaneously pressing <CTRL>, <ALT>, and <DEL> on an attached keyboard will reboot the system, it will not reset the front panel.

Front Panel vs. PC Keyboard

There are two system operating modes: Front Panel and PC Keyboard. Front Panel Mode utilizes the front panel interface (i.e., LCD, LEDs, etc.). PC Keyboard Mode makes use of a VGA monitor and a keyboard for a typical PC interface including the standard DOS prompt/command line.

When the system initially boots, it automatically launches Front Panel Mode. To activate PC Keyboard Mode, press <ESC> on a properly connected keyboard, upon completion of the booting process. Front Panel Mode is re-activated from a DOS prompt by typing 'FP' <ENTER>.

Test Files

Test files are programs or scripts which contain the necessary commands and instructions for the 3500 to perform a test. Test files may be programs developed in C or Basic, DOS batch files, or scripts developed using the Rochelle Script Language™ (RSL). Therefore, test files may have any of the following extensions: exe, bat, or scr.

Programs developed in C or Basic should be capable of running in a DOS environment. When developing a batch file, take note of the available DOS commands and utilities (p. 8). Additional DOS external commands may be loaded as needed from the floppy labeled 'Caldera DR-DOS Operating System' or purchased from ZF MicroSystems at 1-800-683-5943 or 650-965-3800.

The Rochelle Script Language

Scripts that will be used as test files must be developed using the Rochelle Script Language™ (RSL), version 3.0 or more recent. Note that scripts developed for the Rochelle Analog Services Telephone Line Simulator (ASTLS), Model 3410, are fully compatible with the Model 3500.

Additional script commands are available with the 3500 to facilitate the use of the front panel user interface. These additional commands and their function are as follows:

Command	Function
ClearLcd	Clears both lines of the LCD.
DisplayVersion	Displays the versions of the existing front panel firmware and main system program (FP.EXE).
LedBlink *[#]*	Causes the corresponding LED to blink. *The LEDs are numbered 1-14 as follows:* *TEST 1* *TEST 2* *TEST 3* *TEST 4* *TEST 5* *TEST 6* *TEST 7* *TEST 8* *PASS* *FAIL* *MODE 1* *MODE 2* *MODE 3* *DOS*
LedOff *[#]*	Turns the corresponding LED off. = *1* = *2* = *3* = *4* = *5* = *6* = *7* = *8* = *9* = *10* = *11* = *12* = *13* = *14*
LedOn *[#]*	Turns the corresponding LED on.
PanelPause	Causes the script to pause until a button is pressed on the front panel.
WriteCounter1 *[numbers]*	Displays numbers on the PASS counter.
WriteCounter2 *[numbers]*	Displays numbers on the FAIL counter.

Command	Function
WriteLcd *[text]*	Displays text at the current location on the LCD.
WriteLcd1 *[text]*	Displays text on the top line of the LCD. If no text is entered this command will clear the top line of the LCD.
WriteLcd2 *[text]*	Displays text on the bottom line of the LCD. If no text is entered this command will clear the bottom line of the LCD.

Naming Test Files

Test Files must be named test1.* through test8.* (the extension depends on the type of file). Each *functional directory*: mode1, mode2, mode3, and dos can accommodate eight test files. The test files are automatically mapped to the test launch buttons on the front panel based on the file name.

NOTE If there is more than one file called test1 (e.g., test1.bat, test1.scr, and test1.exe), the system looks first for a .scr file, then an .exe, and finally a .bat file.

Loading Test Files

Test files must be loaded on to the C: drive in order to be launched with the test launch buttons on the front panel. A preinstalled DOS mode utility automatically copies files from a floppy into the *functional directories* on the C: drive. The utility is launched by pressing the 'TEST 4' button with DOS mode selected.

NOTE All floppy disks used for loading test files should first be checked for viruses.

A file called asgndir.bat determines which directory (set of tests) on the floppy disk is associated with each of the mode selector buttons: MODE 1, MODE 2, and MODE 3, by assigning the directories to the functional directories (see Directory Structure, p. 9) on the C: drive. The file, asgndir.bat, must be included on the floppy disk in order to use the DOS mode utility.

SET MODE1=[directory name]
SET MODE2=[directory name]
SET MODE3=[directory name]
SET DOS =[directory name]

The asgndir.bat file is edited to establish relationships between directories on the floppy disk and functional directories on the C: drive. Note that it is not necessary to enter a directory name for each mode. For example, if a user wants to load only one set of test files from a directory called 'CIDPHONE' on the floppy disk, they could edit line 1 to read 'SET MODE1=CIDPHONE' and leave the other lines blank following the '='.

NOTE	In the DOS functional directory, file names test3.bat, test4.bat, and test8.bat are used by preinstalled DOS mode utilities. Files with the same name and extension cannot be copied to the directory.

In cases where the directory names on the floppy are identical to the names of the functional directories on the C: drive, it is not necessary to include asgndir.bat on the floppy. An alternative DOS mode utility, launched by pressing the 'TEST 3' button with DOS mode selected, simply copies the files from directories on the floppy (B:) to the corresponding directories on the C: drive.

Running Tests

Tests are run from the front panel by pressing the corresponding test launch button while the appropriate mode is selected. For example, to run a Mode 1 test named 'test1.scr', the user would press the 'MODE 1' button, to select Mode 1, followed by the 'TEST 1' button.

REMEMBER	The system must be in Front Panel Mode in order to utilize the front panel interface.

To terminate a test at any time, press the 'FAIL' button. This is similar to pressing <ESC> on a PC keyboard.

FAX Testing

The system programs that are used to simulate the sending and receiving of faxes (SFAX.EXE and RFAX.EXE) operate in a fixed manner. Therefore, depending on the type of FAX device being tested, the test file will need to introduce delays and prompt the 3500 operator accordingly. For example, when sending a FAX from the 3500 to a FAX device in manual answer mode, it will be necessary to instruct the operator to go off-hook to receive the FAX. This can be accomplished in a script using the Delay and WriteLcd commands.

NOTE	When sending a FAX from the device under test to the 3500, the operator must follow the number dialed with a '#'.

Audio

The 3500 supports the playback and recording of audio files in the following format:

Format:	Signed PCM
File Extension:	MSG
Sample Rate:	9600Hz
Channels:	Mono
Resolution:	16-bit

Playback can be initiated using the PLAYWAVE script command and record can be initiated using the RECORDWAVE script command. Audio files are accessed from and stored to the C:\SYSTEM directory (where the PLAY.EXE and RECORD.EXE programs are located) by default. In order to access and store audio files in other directories (e.g., any of the mode directories), a path must be specified after the PLAYWAVE/RECORDWAVE script command.

For example, PLAYWAVE C:\MODE1\FILENAME.MSG.

NOTE	The audio capabilities of the 3500 are designed for telephony testing. The 'AUDIO IN' and 'OUT' ports are extensions of the simulator audio path. They are not suitable for multimedia applications typically found on desktop PCs.

Application Note

Telecommunications Products, Inc. maintains an R&D facility in Austin, Texas and a manufacturing plant in Malaysia. R&D engineers use a Rochelle Model 3410 Analog Services Telephone Line Simulator (ASTLS) and the Rochelle Script Language to develop tests to exercise product features and ensure that products are performing according to applicable standards. The production facility utilizes several Model 3500 Caller ID Telephone Production Testers to perform QA testing.

The current month's production schedule includes a run of each of three products: the Model 67FAX fax machine, the Model 99CIDCW Caller ID on Call Waiting display unit, and the Model 1302AM digital answering machine w/ Caller ID. In the development of these products, R&D engineers created several scripts to exercise the various features of the products. In preparation for production, the engineers modified the existing scripts to perform quick, quality assurance type tests suitable for a production-line environment. Scripts for the 67FAX include handshake, send, and receive tests, scripts for the 9900CID include single message, multiple message, and type II Caller ID tests, and scripts for the 1302AM include single and multiple message Caller ID tests and various message recording and playback tests.

As production is set to begin, R&D engineers forward the scripts to Malaysia, via e-mail, in the form of a single zipped (compressed) file. When production personnel unzip the file, three directories, 67FAX, 9900CID, and 1302AM, and a file called asgndir.bat appear. Each directory contains eight files named test1.scr through test8.scr.

Production personnel copy the three directories and their contents, and the file, asgndir.bat, to a floppy disk. They then boot the 3500, insert the floppy, press the 'DOS' button to select DOS mode, and then press the 'TEST 4' button to load the test files. The system begins to copy the files to the functional directories on the C: drive according to the definitions contained in asgndir.bat. Once the process is complete, the system is ready for testing and production begins.

```
SET MODE1=67FAX
SET MODE2=9900CID
SET MODE3=1302AM
SET DOS=
```

Calibration Interval

Rochelle Communications recommends that the Model 3500 be calibrated on a regular interval of 1-year. Refer to the Certificate of Calibration that accompanied the unit to determine the next due date.

Rochelle Calibration Services

When your Model 3500 is due for calibration, contact Rochelle or an Authorized Rochelle Distributor, Dealer, or Agent to schedule maintenance services. Maintenance charges are available from the Product Service Department upon request.

Specifications

Central Office Line Simulation

Type:	2-Wire, Loop Start
AC Impedance	600 or 900 ohm (+/- 25 ohm), internally set by JP5
DC Voltage	48VDC (floating); software-controlled polarity
Ringer:	Programmable 15 to 80 VACrms (+/- 1 VACrms), 20 Hz to 80Hz (+/- 1 Hz); software-controlled cadence
Line Current Feed:	Programmable 10 to 80 mA in 1 mA increments (+/- 2mA)

Loop Simulation

Short (0 km), Medium (3 km), and Long (6 km) – 24AWG telephone wire simulated by a precise RC network.

Modem

Type:	Bell 202or V23
Prog. Transmit Levels:	0 to -48 dBm
Carrier Detect Sensitivity:	ON at –43 dBm, OFF at -48 dBm

Fax Modem

Type:	ITU V.29, V.27ter, V.26bis
Speed:	9600/4800/2400 bps; GIII compatible
Prog. Transmit Level:	0 to -48 dBm

Five Programmable Tone Generators

Primary Generator	
Frequency Range:	150 Hz to 20,000 Hz (+/-2 Hz)
Levels:	-38 dBm to +10dBm(+/- 0.5 dBm)
Four Additional Generators	
Frequency Range:	50 Hz to 3500Hz (+/-2 Hz)
Levels:	-48 to 0 dBm (+/- 0.5 dBm)

Noise Generator

Type:	White; flat to better than 50 kHz
Randomness:	Pseudo-random, with repeat interval of 5.2 hours
Range:	88 to 20 dBrnC (+/- 1.0 dBrnC)

DTMF Receiver

Frequency Deviation Accept:	+/-1.5%, +2 Hz nominal
Frequency Deviation Reject:	+/- 3.5%
Amplitude for Detection:	32 dBm to -2 dBm per tone
Duration:	40 mS or greater

Audio In/Audio Out

Physical Description:	Mono, 3.6mm (1/8") jacks
Input Impedance:	10K ohms
Prog. Volume Control (In/Out):	0 dB to -48 dB
Output Drive:	Any load with impedance of 4 ohms or higher
Audio Out Power:	Up to 6 watts
Frequency Response:	Flat; +/- 0.3 dB shaping relative to 1.0 kHz @ 200 Hz to 4 kHz

User Interface (Front Panel)

2 Line x20 Character Vacuum Fluorescent Display
14 Push-Buttons w/ LEDs
Pass/Fail Counters
Testing Ports: 2 RJ-11, and 1 Set of Banana Jacks (Tip and Ring)

PC Subsystem

486SX 66 or 100 MHz Processor
2 or 10 MB DRAM
2 MB DiskOnChip (expandable to 288 MB) – Drive C:
Dual Density 3.5 inch Floppy Disk Drive (2HD/2DD) - Drive A:
9-pin RS-232 Serial Port-DTE (configured as COM1)
Standard 15-pin VGA Port
PS/2 Style Keyboard Input
25-pin Multi-Mode Bi-Directional Parallel Port (configured as LPT1)
Real-Time Clock w/ 3.6 V Lithium Battery Backup
PC/104 Carrier

Operating System

Caldera DR-DOS v. 7.02 (embedded version w/ limited external commands)

Programming Language

Rochelle Script Language™, Release 3.0 or more recent
Turbo C with libraries and examples provided with 3500-DEV

Mechanical

Dimensions:	10.1” x 12.8” x 4.1” (metal die-cast enclosure)
Weight:	8.8 lbs. (4.0 kg)

Power

Universal Input (100 - 250 VAC / 50 - 60 Hz)
External Power Adapter Unit - 25 Watts nominal

Maximum Requirements:	+ 5 VDC	4.0 A MAX
	+12 VDC	1.0 A MAX
	–12 VDC	0.6A MAX

FCC Part 15

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will have to correct the interference at his or her own expense.

ROCHELLE COMMUNICATIONS
DSP/104 INSTALLATION GUIDE AND USER GUIDE

INSTALLATION

The DSP/104 is an optional internal for the Rochelle 3500 Caller ID telephone Production Tester which features a programmable Digital Signal Processor (DSP) with telephony analysis functions.

To install the DSP/104, please remove the top two screws on the front and back panels and lift the top cover. Plug card into PC104 connector of 3500 and secure with screws. Connect cable from J1 on the DSP/104 to J10 on the main board of the 3500.

Jumper Settings

The card is configured at the factory as COM3 (3E8H – 3EFH interrupt 4). The signal multiplexers and programmable gain amplifier use addresses 3E0H – 3E7H. Other address selections are possible via jumpers on JP1. (Note: A9 is assumed to be "1"). The DSP/104 requires 16 consecutive bytes of address space. In the default settings, the DSP/104 uses addresses 03E0H - 03EFH.

Interrupt Settings

The interrupt may be set as IRQ4, IRQ9, IRQ10, or IRQ11 via the jumper position on JP2. The default is IRQ4.

Auxiliary Inputs

J2 provides extra inputs for measurement of additional ac signals. The pin assignments for J2 are as follows.

J2 PIN ASSIGNMENTS

1	AIN1	2	GROUND
3	AIN2	4	GROUND
5	AIN3	6	GROUND
7	AIN4	8	GROUND
9	RESERVED	10	GROUND
11	RESERVED	12	GROUND
13	RESERVED	14	GROUND
15	RESERVED	16	GROUND
17	AIN9	18	GROUND

19	AIN10	20	GROUND
21	AIN11	22	GROUND
23	AIN12	24	GROUND
25	AIN13	26	GROUND
27	AIN14	28	GROUND
29	AIN15	30	GROUND
31	AIN16	32	GROUND
33	DSPOUT	34	GROUND

It is recommended that the inputs be AC coupled or swing symmetrically about ground. The maximum signal levels should not exceed +/- 5 volts. The maximum signal that can be measured is 2.4 VAC peak or approximately 1.7 VRMS.

The input signals listed above are applied to two multiplexers. AIN1, AIN2, AIN3, AIN4, and the reserved signals connect to multiplexer number one and the remaining signals connect to multiplexer number 2.

The default address for multiplexer one is 03E0H. The address for multiplexer two is 03E1H.

To select an input on multiplexer one, write the following to address 03E0H.

AIN1	00
AIN2	01
AIN3	02
AIN4	03

The output of multiplexer two is applied to an input of multiplexer one. To select an input on multiplexer two it is first necessary to write a 07 to address 03E0H to select multiplexer two's output. Then the inputs are selected by writing the appropriate value from the list below to address 03E1H

AIN9	00
AIN10	01
AIN11	02
AIN12	03
AIN13	04
AIN14	05
AIN15	06
AIN16	07

Programmable Gain Amplifier

The output of multiplexer one goes to a software programmable gain amplifier. This amplifier has gains of 1, 2, 4, 8, and 16. This additional gain permits the measurement of low-level signals. The address of the programmable gain amplifier is 03E2H.

The gains are selected by writing the appropriate value from the list below to address 03E2H.

Gain	Value
1	0
2	1
4	2
8	3
16	4

When using the programmable gain feature on a gain setting other than 1, it is the user's responsibility to adjust any readings from the DSP card by the appropriate factor. The corrected reading should be lower than that of unity gain. The correction factors in dB are listed as follows Gain / Correction (in dB) : 2 / -6.02, 4 / -12.04, 8 / -18.06, 16 / -24.08. For example: If the gain is set for 2 and the DSP returns a measured value of –10.2, the actual value is = -10.1 –6.02 = -16.21.

To select the multiplexers the command "**INPUTSOURCE AUX**" must be sent to the DSP card. To restore the DSP input send the command "**INPUTSOURCE LINE**" after the ">" appears.

COMMAND SET INTERFACE.

The DSP card communicates via COM3 at 19,200 BPS, 8 data bits, no parity and 2 stop bits. Commands must be terminated with a carriage return and line feed.

The DSP card will send a ">" when it is ready to accept a command.

Two tone generators, a FSK generator, an RMS and a P.56 speech meter and a DTMF digit analyzer may be programmed and selectable.

The commands supported by the DSP/104 are:

TONE1 {ON,OFF}
Tone1Freq *frq* ; *frq* is in the range 10.0 to 10000.0(Hz)
Tone1Level *amp* ; *amp* in the range -56.0 to +4.0(dBm)

TONE2 {ON,OFF}
Tone2Freq *frq* ; *frq* is in the range 10.0 to 10000.0(Hz)
Tone2Level *amp* ; *amp* in the range -56.0 to +4.0(dBm)

SENDFSK "Quoted String" ;see below for more details

CARRIER {ON,OFF}

SPACE {ON,OFF}
MarkFreq *frq* ; *frq* is in the range 1100.0 to 1400.0(Hz)

SpaceFreq *frq* ; *frq* is in the range 2000.0 to 2300.0(Hz)
MarkLevel *amp* ; *amp* in the range -56.0 to +4.0(dBm)
Twist *tamp* ; *tamp* in the range -10 to +10(dB)
BitRate *frq* ; *frq* in the range 1150.0 to 1250.0(Hz)
MarkStuffing *bits* ; *bits* is a positive decimal value from 0 to 150 in steps of 1
Echo1Attn {*attn*,OFF} ; the parameter is either OFF or *attn*, where *attn* is from 0.0 to 48.0(dB)
Echo1Delay *dly* ; *dly* is from 0.0 to 20.0(ms)
Echo2Attn {*attn*,OFF} ; the parameter is either OFF or attn, where *attn* is from 0.0 to 48.0(dB)

Echo2Delay *dly* ; *dly* is from 0.0 to 20.0(ms)

INPUT {ON,OFF)
InputAttn *attn* ; the parameter is *attn*, where *attn* is from -30.0 to 30.0(dB)
InputGain {0,6,12} ; this command sets the input gain to 0, 6dB, or 12dB

InputSource {LINE, AUX} ; this command selects the input source

THROUGH {ON/OFF}
ThroughAttn *attn* ; the parameter is *attn*, where *attn* is from -30.0 to 30.0(dB)
ThroughDelay *dly* ; *dly* is from 0.0 to 100.0(ms)

CAL {8/24} ;performs an RMS measurement using 8 KHZ or 24KHZ sampling
SPEECH *N* ;performs P.56 Method B compliant level measurement on *N* seconds of speech.

DTMF ;performs DTMF digit analysis. See below for details.

SAMPLE ;samples waveform in 8-bit PCM format. See below for details

FFT ;performs an Fast Fourier Transform (FFT) on 1024 time-domain

samples

frq is a positive decimal integer or a positive decimal real number to one decimal place only.

amp is a signed decimal integer or a signed decimal real number to one decimal place only. For positive values, the leading + sign is optional.

tamp is a signed decimal integer. For positive values, the leading + sign is optional.

dly is a signed decimal integer or a signed decimal real number to one decimal place only.

FSK Generation Commands

SENDFSK "Quoted String"

Prior to issuing this command, the FSK modem parameters must be set as desired, the carrier turned on, and the modulator set to send mark.

The characters between the first quotation mark and the sequence <double quotation mark><CR><LF> will be transmitted. The sequence may contain double quotation marks, <CR>, <LF>, and any other non printing characters. The 8th bit is not stripped within the quoted string so that the value of the 8th bit is preserved (it may, for example, be a parity bit).

A prompt is transmitted by the DSP to the PC after the FSK transmission of the string.

At the completion of the transmission of the string, the carrier is left transmitting continuous mark.

RMS Signal Measurement.

The command to measure a signal is "**CAL 8**". After one second the DSP card returns the RMS value of the applied signal. **CAL 8** uses 8 KHz sampling and therefore is good for signals with frequency content less than 4KHz.

For higher frequency signals there is a "**CAL 24**" command. It operates the same as CAL 8 but uses 24KHz sampling. The maximum frequency content should be 12KHz. Due to differences in

the pass-band ripple of internal filters, **CAL 8** and **CAL 24** may return different values when measuring the same signal.

Sample Capture Command.

SAMPLE

All audio transmission is turned off. The asynchronous transmission rate is changed to 115.2kbit/s. Audio samples are captured at 8 kHz from the LINE or AUXIN input, as selected, and transmitted to the PC as PCM μ law compounded data samples in byte format.

The DSP continues to send PCM samples to the PC until the PC sends the <ESC> character to the DSP at 115.2kbit/s. The DSP will then cease sending samples, change the transmission rate back to 19.2kbit/s, turn back on audio transmission as operating previously to the SAMPLE command, and then send a prompt to the PC to indicate that it is ready to receive another command.

Command for Performing FFT.

FFT

After the <CR><LF> following the FFT command, 1024 time domain data samples are sent by the PC in μ-law PCM format as bytes, first sample in time first, followed by a further <CR><LF>. The DSP then turns off all audio transmission and then performs a 1024 element FFT. It then sends the 1024 frequency domain data samples back to the PC, followed by <CR><LF>. The samples will represent the magnitude in each frequency bin. Their numerical representation will be:

- 16-bit linear,
- 2s complement signed positive

The magnitudes will be scaled so that, for a 0dBm rms sine wave whose frequency centers on an FFT bin, the result will be (~)+32767. The transmission format will be:

- lowest bin first
- byte pairs for the 16-bit words, with least significant byte first in each pair
- values reckoned below the estimated noise floor will be returned at the estimated noise floor value

Following transmission of the result, the DSP turns back on all audio transmission, and sends a prompt to the PC to indicate that it is ready for another command.

Command for DTMF Digit Analysis.

DTMF

All audio transmission is turned off. Audio samples are captured at 8 kHz from the AIC LINE or AUXIN input, as selected, and DTMF digits are collected.

When each digit start is detected, the following ASCII encoded information is sent to the PC:

- The time duration in ms since the cessation of the previous digit (i.e. the inter digit pause), followed by <SPACE>
- The digit value, followed by <SPACE>

- The frequency (in Hz) and level (in dBm) of the lower frequency of the pair, each followed by <SPACE>
- The frequency (in Hz) and level (in dBm) of the upper frequency of the pair, each followed by <SPACE>

On cessation of the digit, the following information is reported:

- The duration in ms of the digit, followed by <CR><LF>

The full line written by the time the end of the digit has occurred will thus read

IDP D LF LFL UF UFL DL <CR><LF>

Where,

IDP = inter digit pause	decimal number in mS (or >10000 if more than 10 seconds have elapsed)
D = digit	ASCII character
LF = frequency of lower tone	decimal number in Hz
LFL = level of lower tone	decimal number with one digit after decimal point in dB
UF = frequency of upper tone	decimal number in Hz
UFL = level of upper tone	decimal number with one digit after decimal point in dB
DL = digit length	decimal number in mS (or >10000 if more than 10 seconds long)

The DTMF detection mode is terminated by the PC sending an <ESC> character. Any audio transmission is then restored and a prompt is sent to the PC to indicate that it is ready to receive another command.

Command for P.56 Speech Measurement.

SPEECH N

This command may only be used where through signal processing mode has been selected with a "THROUGH ON" command. Audio samples are captured at 8 kHz from the LINE or AUXIN input, as selected, filtering and attenuation/amplification is applied as selected, and the speech level is measured according to the P.56 method B for a period of N seconds or until <ESC> is typed, whichever is the sooner.

At the completion of the measurement, the following information is transmitted to the PC as four ASCII encoded numbers separated by one space and terminated by <CR><LF>:

- measurement time in seconds as an integer
- the Activity Factor as an integer between 0 to 100 indicating percentage

- the Active Level in dBm to one decimal place
- the Long Term Level in dBm to one decimal place

After a measurement, whether timed out or aborted, any audio transmission is then restored following transmission of the results and the <CR><LF> prompt and the DSP is ready to receive another command

CALLER ID TELEPHONE PRODUCTION
TESTER
MODEL 3500

3500 Menu Software Overview

Revision 2.2
January 2002

Software Overview

The software for the Model 3500 CALLER ID TELEPHONE PRODUCTION TESTER, 3500MENU.EXE, is an optional DOS-based application which offers the user flexibility and convenience in simulating a variety of telephone line conditions and impairments. All network tones and the supported modem signals are also programmable. Some features include:

- Global Caller ID simulation including Telcordia (Type 1, 2), ETSI, NTT, DTMF/MF implementations
- Network tone simulation including call progress tones, special information tones (SIT), subscriber pulse metering (SPM – 12kHz and 16kHz), as well as user programmable, non-standard tones
- Simple, functional fax tester (up to 9600 baud)
- Low speed modem performance tests in the presence of line impairments for Bell 202 and V23
- Programmable audio file player and recorder (16-bit PCM and ADPCM formats)
- DC and AC signal level measurements
- Voltage versus Current Plots for the US and UK
- Return Loss Measurement and Plot
- Dial Pulse Measurement and Analysis
- Script language interpreter

Launching the Software

The 3500MENU software comes pre-loaded on the 3500 in the C:\MENU subdirectory. To launch it, proceed as follows:

1. Change directories to the subdirectory MENU.

   C:\>CD MENU

2. At the prompt, type 3500MENU
3. Press <Enter>

Telephone Network Services

The Network Services menu and associated submenus provide an intuitive means to simulate Caller ID, Call Waiting ID (Type II), Visual Message Waiting,

and Network Tones for the US, UK, Sweden, Denmark, Norway, France, and Japan

Line and Signal Measurements

The Line and Signal Measurements module includes several options for measuring voltage and levels in the presence of various current conditions and signals on the simulated line.

Line DC Voltage

The Line DC Voltage option measures the DC voltage on the simulated line while the device under test is off-hook. The line current may be varied between 10 and 80 mA using the '+' and '-' keys on the keyboard. The displayed voltage measurement refreshes every 1 second.

Measurement resolution is 0.1 V DC.

Voltage vs. Current Plot
TIA/EIA 470-B (USA)
UK
Canada

The Voltage vs. Current Plot option represents an implementation of TIA/EIA-470-B for the US market, and according to BT specifications for the UK. These particular clauses require off-hook, tip-to-ring, DC voltage-versus-current characteristics to conform to a specified region of a particular figure in the specification. This figure, which is reproduced in the software, is used to plot the voltage-versus-current characteristics of a device under test. The results of this test are automatically saved in the comma-delimited file VIPLOT.CSV.

The measurement scenario used in the software is similar to that described in the specification. Upon going off-hook, the software incrementally increases the current from 10 mA to 80 mA in 2-second intervals and plots the measured voltage.

Line AC Voltage

The Line AC Voltage option measures the AC voltage on the simulated line while the device under test is off-hook. This test is useful for measuring voltage levels as signals, such as DTMF, are generated by the device under test. The line current may be varied between 10 and 80 mA using the '+' and '-' keys on the keyboard. The displayed voltage measurement refreshes every 1 second.

Measurement resolution is 1 mV AC. Values less than 50 mV appear as '---' and values greater than 1.5V appear as 'Out OF Range'.

Return Loss Measurement and Plot

The Return Loss measurement and plot options compare the impedance of the device under test with the source impedance by comparing the voltage of the load to the voltage of a known 600 ohm source. The measurement is taken in the presence of a single frequency tone over tip/ring via a 600 ohm internal impedance. The return loss is presented in dB according to the following calculation:

$$20_{\log 10} \left| \frac{R1 + R2}{R1 - R2} \right|$$

R1 = source
R2 = load

The results are plotted and saved into the comma-delimited file LOSS.CSV.

Dial Pulse Measurement Analysis

The 3500MENU software allows the user to measure the number of pulses per second (pps) and the Make/Break ratio for pulse dialing telephone instruments.

DTMF Digit Analysis

The DTMF digit analysis function measures the frequencies, amplitude, and duration of DTMF tones. It requires the presence of the optional DSP/104 card.

MODEL 3500
REMOTE CONTROL

RC.EXE SOFTWARE DESCRIPTION VERSION 1.2 (Optional)

RC.EXE is a DOS based application, which allows a Rochelle Communications Caller ID Telephone Production Tester, Model 3500 to be controlled from an External PC using its serial port. A null modem cable is needed to interface the 3500 to an external PC or serial terminal.

I. USAGE:

RC.EXE is invoked by the AUTOEXEC.BAT file system boot-up. It initializes COM1 and sets it at 9600,N,8,1. No handshaking or flow control is used.

Upon initialization, RC sends the prompt ">" to indicate that it is ready to accept remote commands.

II. COMMAND SET:

The following commands are supported, and are not case sensitive:

AT_RUN <script file name ><CR>
This will cause the software to compile and execute the referenced script file.
Responses: Upon completion of the compile and right before execution, the software sends "+". After the end of execution, it sends ">" to indicate that it is ready for the next command.

AT_STOP
This command will abort the script under way. The software will return ">" when completed.

AT_VERSION
This command will return the version number of the SC>EXE followed by <CR><LF>. Current value is 1.1

<CR> or AT_<CR>
Carriage Return by itself, or AT followed by <CR> will return ">", indicating that the software is ready for the next command.

SYNTAX ERRORS
When an incorrect command or script file name is entered, the software returns "?" followed ">", to indicate that it is ready for the next command.

EXAMPLE
The DTMF.SCR script supports the passing of results to the host PC.
Example:

```
>
AT_RUN DTMF.SCR
+  **Start execution
0  **Detected DTMF digits
1
7
8
AT_STOP
>  **Ready for next command
```

MODEL 3500
SCRIPT LANGUAGE REFERENCE MANUAL

INTRODUCTION

The Rochelle Script Language is an easy to use, yet flexible programming language, which allows users to quickly develop automated test sequences for performance analysis and quality assurance (QA). Script commands are entered, using any text editor, in a sequential fashion (one command per line) to create a script file. Script files are saved as a text file with a .scr extension. *filename.scr.* A script file may be executed on the 3500, or may be pre-complied for faster execution time. A compiled script file will consist of binary data and will have a .cmp extension.

The many commands in the script language allow the user to program parameters such as: line current, ring duration, ring level, FSK signal level, Signal to Noise Ratio, CPE Alert Tone (CAS) levels, frequencies, and duration. Refer to the Script Command Reference for a complete list, including descriptions, of the available commands.

3500 MODES OF OPERATION

The Caller ID Telephone Production Tester, Model 3500 operates in one of four modes of operation:

1. Front Panel Mode: This is the default state of the 3500. A front panel application **FP.EXE** is managing the operation of the unit and will execute scripts that correspond to any test buttons that are pressed. For example, if the 3500 is in the MODE1 state, and the user presses TEST6, the 3500 will execute test6.cmp or test6.scr in the C\MODE1 subdirectory. A script may generally be aborted by pressing the FAIL button on the front panel, or by pressing ESC on a PC keyboard that may be optionally attached to the 3500.

2. Keyboard Mode: By connecting a PC keyboard and PC VGA monitor to the 3500 and pressing ESC, the user can exit from the Front Panel Mode. At that point, the 3500 will behave as a DOS computer and allow the user to access standard text editors and other system utilities to make changes to the script files. In this mode, the user may compile any text script (.scr) into an executeable (.cmp) by running the **COMPILE.EXE** command. Example: COMPILE *test1.scr* will generate the new file *test1.cmp.* The optional menu software **3500MENU.EXE** allows the user to edit and execute script files. Script execution may be aborted by pressing the ESC button on the keyboard.

3. Remote Control Mode: By connecting a null modem between an external host PC and the 3500's COM1 port and by running the application **RC.EXE** on the 3500, the user will be able to remotely run and stop the execution of scripts on the 3500. Example: **AT_RUN** *filename.scr* command sent from the host computer at 9600,N,8,1 will cause the 3500 to run the script *filename.scr* residing on the 3500 system directory. **AT_STOP** will abort the execution of the script in progress.

4. GPIB Mode: The 3500 can be equipped with an IEEE-488 GPIB module (GPIB/104), which allows it to act as a Talker and Listener and to execute scripts under the external control of a host using the GPIB protocol. This is feature that is under development. Please contact Rochelle Communications for more information.

COMMAND REFERENCE CONVENTIONS

The following notation conventions are used throughout the Script Command Reference:

Convention	Purpose
UPPERCASE	Represents a script command or function.
{scroll brackets}	Encloses **required** items and parameters. Type only the information within the brackets, not the brackets themselves.
[square brackets]	Encloses **optional** items and parameters. Type only the information within the brackets, not the brackets themselves.
<angle brackets>	Encloses non-printable, binary values represented as a two-byte hexadecimal.
| (vertical bar)	Separates **options** inside a set of brackets. Only one option should be selected.
Num	Represents a numeric expression.
Expr	Represents an alphanumeric expression.

Script commands are not case sensitive, but parameters must be separated by spaces. Each script command and its corresponding parameters (if any) must be entered on a separate line, terminated by a carriage return and a line feed. Comments can be included on the same line as long as they are placed after an * (asterisk) or ; (semi-colon).

Caller ID, Incoming Calling Line Identification (ICLID), Calling Line Identification (CLI), and CID all used interchangeably and all refer to the telephone network service and its implementation for the identification of a caller's telephone number and other information.

The abbreviation ms refer to milliseconds.

Script Command Classification

The 3500 script commands are grouped in three classes, depending on their function:

I) Front Panel Control

II) CO Line Simulation and Signaling, and

III) Measurement, Logic, and System Functions

This documents lists the support script commands alphabetically in each of these groups for ease of reference.

I) FRONT PANEL CONTROL COMMANDS

The following commands may be used to control the 2x20 Vacuum Fluorescent Display (LCD), two 4-digit counters, and 14 LED's on the 3500's Front Panel. These commands are unique to the 3500 and will not execute on other Rochelle testers (such as the ASTLS 3410) with script support.

- **CLEARLCD:** Clears the LCD and positions the cursor at the beginning of line 1.

- **DISPLAYVERSION:** Displays the Front Panel firmware version on the LCD line 1, and the FP version on the LCD line 2.

- **LEDBLINK {Num}:** Blinks the specified LED (1-14), where LED1 – LED8 correspond to TEST1 – TEST8, LED9 = PASS, LED10 = FAIL, LED11 = MODE1, LED12 = MODE2, LED13 = MODE3, and LED14 = DOS MODE.

- **LEDOFF{Num}:** Turns the specified LED (1-14) OFF. See LEDBLINK for LED mapping.

- **LEDON {Num}:** Turns the specified LED (1-14) ON. See LEDBLINK for LED mapping.

  Example:

  LEDON 9 * Turns ON LED 9 (associated with the PASS button)

- **PANELPAUSE:** Pauses script execution until any key is pressed on the Front Panel.

- **WRITECOUNTER1 [….]:** Writes the specified parameter to the PASS counter up to 4 digits (0-9999). If a parameter is not present, the PASS counter will be cleared.

  Examples:

  WRITECOUNTER1 239 * Displays 239 on the PASS counter
  WRITECOUNTER1 * Clears the PASS counter

- **WRITECOUNTER2 [….]:** Writes to the FAIL counter up to 4 digits (0-9999). If a parameter is not present, the FAIL counter will be cleared.

  Examples:

  WRITECOUNTER2 5 * Displays 5 on the FAIL counter

- **WRITELCD […..]:** Writes to the front panel LCD at the current cursor position. No blanks are appended to the string.

- **WRITELCD1 […]:** Writes up to 20 characters to the first line on the LCD. Pad with trailing blanks. If no parameters are found, then LCD line 1 is cleared and the cursor is placed at the beginning. Kanji and other non-ASCII characters may be specified by

typing their HEX value between angle brackets. For a listing of the Kanji and special character code map, please refer to the Noritake CU20025 data sheets which may be found on Noritake's web page, or contact us.

Examples:

```
WRITELCD1 Hello There     * Displays "Hello There" on line 1
  WRITELCD1                * Clears LCD line 1
WRITELCD1  <89><AB>        * Displays the corresponding characters to
                         * 89H and ABH.
```

- **WRITELCD2 […]:** Writes up to 20 characters to the second line on the LCD. Operates in a similar manner as WRITELCD1.

II) CO LINE SIMULATION AND SIGNALING COMMANDS

These script commands allow the definition and control of the CO line simulation parameters and AC signaling characteristics, including line current, line polarity, ringing, and Caller ID signals.

Default Values

Each time a script is launched, the program sets various parameters to default values. For parameters with a default value, the user may choose to accept the default value or change the value with a script command. All parameters without a default value must be set with a script command.

Parameter (units)	Default Value	Limits	Command(s) to Change
Ring Level (VRMS)	60	20-80	RINGLEVEL
Ring Frequency (Hz)	20	20-80	RINGFREQ
CAS Tone Frequency			
Tone 1 (Hz)	2130	50-3500	TONE1FREQ
Tone 2 (Hz)	2750	50-3500	TONE2FREQ
CAS Tone Levels			CASLEVEL or
Tone 1 (dBm)	-20	-48 – 0	TONE1LEVEL
Tone 2 (dBm)	-20	-48 – 0	TONE2LEVEL
SAS Tone Frequency (Hz)	440	Fixed at 440	N/A
SAS Tone Level (dBm)	-20	-48 - 0	LEVEL
Level (dBm)	-20	-48 - 0	LEVEL
SNR (dB)	48	0 - 48	SNR
Line Current (mA)	40	10 - 80	LINECURRENT
FSK Modem Type	Bell202	Bell202 or V23	MODEM
SPM Level (dBm)	-20	-38 - +10	SPMLEVEL
Polarity	Normal	Normal / Reverse	POLARITY
Noise (dBrnC)	OFF	OFF or 20-90	NOISE
Baud Rate (bps)	1200	1000 - 1400	VARBAUD
Mark Frequency (Hz)	1200	1000 – 1400	MARKFREQ
Space Frequency (Hz)	2200	2000 – 2400	SPACEFREQ

Mark Level (dBm)	-20	-48 – 0	MARKLEVEL
Space Level (dBm)	-20	-48 – 0	SPACELEVEL
Tone 3 Level (dBm)	-20	-48 – 0	TONE3LEVEL
Tone 4 Level (dBm)	-20	-48 – 0	TONE4LEVEL
Tone 3 Frequency (Hz)	1000	50 – 3500	TONE3FREQ
Tone 4 Frequency (Hz)	1000	50 – 3500	TONE4FREQ

- **AUDIOIN {ON | OFF}:** ON couples the signals present on the AUDIO IN jack to the simulated line. This can be used to inject audio or noise. OFF disconnects this path. The default is ON.

  Example:

  AUDIOIN ON * Connects audio input to line

  Note: Audio input must be coupled through the AUDIO IN jack.

- **AUDIOOUT {ON | OFF}:** ON (default) couples the signals and tones generated by the Model 3500 to the AUDIO OUT jack. OFF disconnects this path. Please note that the programmable white noise and any received signals from the unit under test are not connected to AUDIO OUT. Also, please note that OUDIO OUT is an amplified output capable of driving up to 6 watts into a 4-ohm load.

  Example:

  AUDIOOUT ON * Turns audio output ON

- **CARRIER {ON | OFF}:** Initiates or terminates a continuous FSK modem carrier signal on the line. This command is useful when using the SEND command to manually generate ICLID data and control the duration of the Channel Seizure and Mark signals. This command is usually preceded by the MODEM and LEVEL commands, which select the signal characteristics.

  Example:

  MODEM BELL202 * Selects Bell 202 mode
  LEVEL 20 * Sets level to -20 dBm
  CARRIER ON * Outputs a continuous carrier signal
  DELAY 3000 * Carrier duration is 3 seconds
  CARRIER OFF * Turns carrier OFF

- **CASLEVEL {Num}:** Used to set the CAS level when using the SENDCAS command to generate a nominal CAS tone. Valid values range from 0 to -48 dBm. Typical values in the field are –32 dBm to –14 dBm per tone.

Example:

CASLEVEL -20

- **CASLEVEL {+ | -}:** Increases or decreases the absolute value of the signal level by 1dB.

Example:

CASLEVEL +
CASLEVEL -

- **DTMFACK {DTMF Digit}{Duration}:** Pauses script execution up to the specified duration or until the specified DTMF tone (acknowledgement, or ACK) is detected. The duration is measured in ms and cannot exceed 65,535. If no duration is specified, the default value of 200 mS applies. The period between the start of this command (typically the end of an alerting CAS tone) and the start of the DTMF ACK is measured and displayed as well as the duration of the DTMF ACK tone. If an ACK is incorrect or not received, an error message is displayed and the script continues. After each DTMFACK command, the total number of DTMFACK failures and successes is displayed.

Example:

DTMFACK A 300 * Waits for up to 300 mS for the DTMF A tone

DTMFACK * Waits for up to 200 mS for the DTMF D tone

Note: The Duration of the ACK tone and the delay from the start of the command to the start of the ACK is accurate within +/- 20 mS. Please see CW_CID.SCR for more details.

- **DUALTONE {Duration}:** Generates the two tones set by TONE1FREQ, TONE2FREQ, TONE1LEVEL, and TONE2LEVEL for the specified duration. The duration is measured in mS and cannot exceed 65,535.

Example:

```
TONE1FREQ 770        * Sets frequency and amplitude for DTMF B
TONE2FREQ 1633
TONE1LEVEL –10       * Tone 1 level is -10dBm
TONE2LEVEL –8        * Tone 2 level is -8dBm
DUALTONE 70          * Generates DTMF B for 70 mS
```

- **ENDCLI:** Generates an British Telecom-compliant (SIN 227 and 242) Calling Line ID

(CLI) packet as defined by parameters following a preceding STARTCLI command (see the sample script, UK_BT.SCR).

Example:

```
STARTCLI
        parameter
         .
         .
         .
        parameter
ENDCLI
```

- **ENDCWCID:** Generates a Telcordia-compliant Caller ID on Call Waiting (Type II Caller ID) packet as defined by parameters following a preceding STARTCWCID command.

Example:

```
STARTCWCID
         parameter
          .
          .
          .
        parameter
ENDCWCID
```

- **ENDMULTIPLE:** Generates a Telcordia-compliant Multiple Data Message Format (MDMF) packet, as defined by parameters following a preceding MULTIPLE command.

Example:

```
MULTIPLE
        parameter
         .
         .
         .
        parameter
ENDMULTIPLE
```

- **FSK1010:** Generates a continuous alternating bit stream of FSK data (101010...) i.e., Channel Seizure, until the user presses a key.

Example:

```
FSK1010
DISPLAY Press any key to stop continuous mark signal
```

- **FSKBAUD {Baud Rate}:** Sets the baud rate to be used by a subsequent VARFSKSEND command. Valid values range from 1000 to 1400, while typical values for Bell 202 systems are 1200 +/- 12.

  Example:

  ```
  FSKBAUD 1210
  ```

  Note: This command is identical in function to the VARBAUD command.

- **FSKBAUD {+ | -}:** Increases or decreases the absolute value of the baud rate by 1.

  Example:

  ```
  FSKBAUD +
  FSKBAUD -
  ```

- **FSKDELAY {Duration}:** Introduces a delay of the specified duration between each character (i.e., bit stuffing delay) when sending FSK data. The duration is measured in ms and cannot exceed 65,535 mS. This command only applies to the script currently running. The delay is reset at the end of each script execution.

  Example:

  ```
  FSKDELAY 25          * Introduces a 25 mS delay between the transmission
                       * of each character in the following FSK data string
  ```

  Note: FSKDELAY does not apply during the Channel Seizure signal.

- **GETDTMFSTR {Num}:** Detects DTMF tones and compares the digits to those specified. While the command executes, the detected DTMF tones are displayed on the PC monitor.

  Example:

  ```
  GETDTMFSTR 5551234
  ```

  If the wrong string is received, the following error message is displayed on the Front Panel: “ERROR. PRESS A KEY”

- **HOOK {ON | OFF}:** Forces the hardware to simulate a CPE going ON HOOK or OFF HOOK. The AC impedance of the CPE load is internally set at 600 ohms.

  Example:

  HOOK ON

- **LEVEL {Num}:** Sets the signal level for any subsequent FSK signal. Valid values range from 0 to -48 dBm. The minus ('-') sign is optional.

  Example:

  LEVEL –20 * -20 dBm signal level – approximately -14dBm into a high-
  * impedance load

  Note: Signal levels expressed in dBm assume a 600-ohm impedance on the line. If this is not the case (e.g. Type I Caller ID transmission into a high-impedance load), the actual signal placed on the line will vary, depending on the load. The signal level into a high-impedance load will be about 4- 6 dB higher than the programmed dBm value.

- **LEVEL {+ | -}:** Increases or decreases the absolute value of the signal level by 1 dB.

  Example:

  LEVEL +

- **LINEBREAK {Duration}:** Generates an Open Switch Interval (OSI) by breaking the DC on the line for the

  specified duration. The duration is measured in ms and cannot exceed 65,535 mS. OSI may be used as a Terminal Equipment Alerting Signal (TAS) in conjunction with the transmission of Caller ID or VMWI information.

  Example:

  LINEBREAK 20 * Breaks the line for 20 mS

- **LINECURRENT {Num|+|-}:** Sets or increases/decreases the line current on the simulated CO line. Valid range: 10mA to 80mA.

  Examples:

  LINECURRENT 20 * Sets the CO line current to 20 mA (+/-1 mA)

  LINECURRENT + * Increases the CO line current by 1 mA

- **LINELOOP {SHORT | MEDIUM | LONG}:** Activates an artificial line circuit to simulate a loop length of

0 km (short), 3 km (medium), or 6 km (long).

Examples:

LINELOOP MEDIUM * Simulates a 3 km loop length
LINELOOP LONG * Simulates a 6 km loop length

Note: The simulated loop is modeled with precision resistor and capacitor networks based on published electrical characteristics for 24AWG (0.5mm) non-loaded copper telephone cable, filled core PIC, 55°F, at 1000Hz. The series resistance of such cable is approx. 165 ohms/km (265.5 ohms/mile) and the shunt capacitance is 52 nF/km (83 nF/mile). No inductors are used in this model.

- **MAKECALL:** Rings the device under test until it answers. Uses ring levels and frequencies as previously defined in the script and a ring cadence of 2 sec ON/4 sec OFF.

  Example:

  MAKECALL *Rings device under test and wait for offhook.
  SENDFAX Testfax.f01 * Sends the specified file in FAX format.

- **MARKFREQ {Num}:** Sets the frequency at which the MARK bits are sent in a VARFSKSEND string. Valid values range from 1000 to 1400 Hz. Typical value for the mark frequency for Bell 202 systems is 1200 +/- 12 Hz.

  Example: MARKFREQ 1180

- **MARKLEVEL {Num}:** Sets the signal level at which the MARK signal (logical 1) is set at in the VARFSKSEND command. Valid values range from 0 to -48 dBm, while typical values range from –12 to –32 dBm.

  Example: MARKLEVEL –26

- **MARKLEVEL {+ | -}:** Increases or decreases the value of the signal level by 1 dB.

  Examples:

  MARKLEVEL +
  MARKLEVEL –

- **MODEM {Type}:** Selects the FSK Modem to be used for data transmission. Bell 202 is used for US compatible systems, whereas European (BT and ETSI) and Japanese standards rely on ITU V.23. In practice, most Bell 202 receivers will also work with V.23 frequencies.

Example:

```
MODEM BELL202    * Selects Bell 202 modem type for FSK transmission
MODEM V23        * Selects V.23 modem type for FSK transmission
```

Note: The modem type should be set for all scripts using SINGLE, MULTIPLE, SEND, STARTCLI, and STARTCWCID.

- **MONITORDTMF {DTMF digit}{Duration}:** Logs the number of times the specified DTMF digit is detected in the specified period. The duration is measured in seconds and cannot exceed 65,535. Time remaining and the number of detections are calculated and displayed during script execution (see also DTMFACK).

Example:

```
MONITORDTMF D 30      * Detects DTMF 'D' and tallies the instances for 30
                        sec
```

- **MSG6 {ACTIVATE | DEACTIVATE}:** Activates or deactivates a Single Data Message Format (header value=6 hex) Visual Message Waiting Indicator (VMWI) packet. Used to simulate VMWI based on the Telcordia Technologies (formerly Bellcore) and Stentor published specifications.

Example:

```
MSG6 ACTIVATE
```

- **MSGMUL {ACTIVATE | DEACTIVATE}:** Activates or deactivates a Multiple Data Message Format (header value=82 hex) Visual Message Waiting Indicator (VMWI) packet. Used to simulate VMWI based on the Telcordia Technologies (formerly Bellcore) and Stentor published specifications.

Example

```
MSGMUL DEACTIVATE
```

- **MULTIPLE:** Begins the definition of a Telcordia Multiple Data Message Format (MDMF) packet. Message parameters are defined using additional script commands as outlined below. IMPORTANT: The ICLID data is preceded by the nominal Channel Seizure (300 bits/250 mS of alternating 1's and 0's) and Mark (150 mS) Signals.

Example:

```
MULTIPLE
    parameter
```

.
.
.
parameter
ENDMULTIPLE

The following script commands are used to define the parameters in a MDMF packet. These commands are always used in conjunction with both a MULTIPLE and an ENDMULTIPLE command. Not all parameters need to be defined in order to send a MDMF packet.

- ***DATETIME {Num}:*** Date and time in the format: MMDDHHMM. Time is based on a 24-hour clock.

  Example

  DATETIME 03241405 * March 24, 2:05 PM

- ***DDN {Num}:*** Dialable Directory Number.

  Example

  DDN 5551234 * Number to be used for redial

- ***ICLID {Num}:*** Caller ID number.

  Example:

  ICLID 3015551212 * (301) 555-1212

- ***NAME {Expr}:*** Directory name of the calling party. Spaces are entered as <20>.

  Example: NAME DOE<20>JOE

- ***NAMEREASON {Expr}:*** Reason for name absence.

  Example:

  NAMEREASON O * Use “O” for Out of Area / Number Unavailable
  NAMEREASON P * Use “P” for Private / Blocked Number

-QUALIFIER {Expr}: Call qualifier.

Example:

QUALIFIER L * Long Distance

- ***RDRREASON {Num}:*** Reason for call redirection. Valid values range from 0 to 255. Three values are currently defined, as follows:

  - binary 0000 0000 -> Call Forward Universal
  - binary 0000 0001 -> Call Forward Busy

- binary 0000 0010 -> Call Forward No-Answer

Example:

RDRREASON <02> * Call Forward No-Answer

- ***REASON {Expr}:*** Reason for phone number absence.

Example:

REASON O * Use “O” for Out of Area / Number Unavailable
REASON P * Use “P” for Private / Blocked Number

Note: For a detailed description of MDMF parameters, please refer to the appropriate service documentation from Telcordia Technologies (formerly Bellcore), or equivalent standards organizations.

- **NOISE {OFF | Num}:** This command sets the level of the 3500’s white noise generator. Valid values are 20 to 90 (dBrnC) or OFF, to turn it OFF. Use SNR if you need to set the noise level to be relative to the LEVEL command.

- **PARITY {NONE | ODD | EVEN}:** Sets the parity to be used when transmitting FSK data.

Example:

PARITY EVEN

- **PLAYWAVE {Filename}:** Plays the specified audio file through both the test ports (RJ-11s) and the SPKR jack. Audio files are accessed from the current directory by default. In order to access audio files from other directories, the path must be specified before the filename.

Example:

PLAYWAVE C:\SYSTEM\Greeting.msg

The Model 3500 supports the playback and recording of audio files in the following format:

	Format:Signed PCM
File Extension:	***.msg***
Sample Rate:	***9600 Hz***
Channels:	***Mono***
Resolution:	***8-bit***

Note: An external application named PLAY.EXE must be present in the directory from which FP.EXE is running in order to use the PLAYWAVE command.

- **POLARITY {NORMAL | REVERSE}:** Changes the polarity (i.e., tip and ring) on the simulated line.

  Example:

  POLARITY REVERSE

- **RECEIVEFAX {Filename}:** Receives a fax from a unit under test and stores the fax with the specified filename. The RECEIVEFAX command performs all the necessary handshaking and communications protocol in order to receive a fax.

  Example:

  RECEIVEFAX Testfax * Receives and stores fax in a file named Testfax.
  FAXTOVGA Testfax * Displays Testfax

  Note: An external application named RFAX.EXE must be present in the directory from which FP.EXE is running in order to use the RECEIVEFAX command.

- **RECORDWAVE {Filename}{Duration}:** Records audio signals on both the test ports (RJ-11s) and the AUDIO IN jack for the specified duration (in seconds). Audio files are stored to the current directory by default. In order to store audio files to other directories, the path must be specified before the filename.

  Example:

  RECORDWAVE test.msg 10 * Records audio for 10 seconds and
  * stores it in a file named test.msg

  The Model 3500 supports the playback and recording of audio files in the following format:

Format:	***Signed PCM***
File Extension:	***.MSG***
Sample Rate:	***9600 Hz***
Channels:	***Mono***
Resolution:	***8-bit***

  Note: An external application named RECORD.EXE must be present in the directory from which FP.EXE is running in order to use the RECORDWAVE command.

- **RING [Duration]:** Generates a ring signal. The duration is measured in ms and cannot exceed 65,535. If no duration is specified, the default value of 2000 mS (2 seconds) applies.

Examples:

```
RING                    * Generates a 2 second ring signal
RING 1500               * Generates a 1.5 second ring signal
```

- **RINGFREQ {Num}:** Sets the frequency of the ring signal. Valid values range from 20 to 80 Hz.

Example:

```
RINGFREQ 25             * Sets the Ring Frequency to 25 Hz
```

- **RINGLEVEL {Num}:** Sets the ring voltage level. Valid values range from 20 to 80 VACrms.

Example:

```
RINGLEVEL 45            * Sets the Ring Level to 45VACrms
```

- **SEND {Expr}:** Sends the specified data string as an FSK modem signal. The SEND command is useful for embedding ICLID and VMWI packets following a user-programmable Channel Seizure and Mark Signals. This Command can also be used to generate invalid or incomplete ICLID packets, message headers, and checksums. The data String can be any alphanumeric expression. Non-printable, binary values, such as the ICLID header, length, and checksum, should be represented as two byte hexadecimal values enclosed in angled brackets. No blanks are allowed in the data string. If a blank is required, it must be represented in hexadecimal format (<20>).

Example:

```
SEND <0B><04>061215235551234<FF>  *SMDF ICLID packet with invalid
                                  *checksum
```

Note: The SEND command leaves the carrier ON. If you need to turn off the carrier following the SEND command, please use the CARRIER OFF command.

The SEND command can automatically compute and send an ICLID checksum. To compute and send a valid ICLID Telcordia or ETSI packet checksum, a '#' should be entered at the end of the data string. To compute and send an invalid Telcordia or ETSI packet checksum, a '%' should be entered at the end of the data string. SEND CRC calculates and generates the checksum according to the NTT standards for Japan (see below).

Examples:

```
SEND<04><0F>080303195551234#    *send correct checksum
SEND<04><0F>080303195551234%    *send incorrect checksum
```

The SEND command can also compute and send a two-byte CCITT CRC for a previously executed SEND command.

Example:

```
SEND <10> <01> <07><10> <02> <40> <0C> <02> <0A> 0335092111 <10><03>
SEND CRC
```

Important: SEND CRC must be used when creating scripts for Japan Caller ID.

Note: SEND leaves the carrier ON. The CARRIER OFF command can be used to turn the carrier tone off.

The SEND command can be combined with other script commands to control the duration of the Channel Seizure, Mark and signaling delays associated with the national implementations of Caller ID based on the ETSI or Telcordia model. The example shown below illustrates the use of the SEND command to simulate the ICLID implementation defined by BT in SIN 227:

Example:

```
MODEM V23
TONE1FREQ 2130          * Set Alert Tone Frequencies and levels
TONE2FREQ 2750
TONE1LEVEL  -15
RONE2LEVEL  -15
POLARITY REVERSE        * Reverse line polarity
DELAY 125               * Wait for 125 mS
```

The following command sends the Channel Seizure signal. Each letter U (ASCII 55) generates 10 alternating bits 0101010101 for 8.33 mS. A Channel Seizure signal of 150 mS is equivalent to the transmission of 150 / 8.33 = 18 U's.

```
SEND UUUUUUUUUUUUUUUUUU
DELAY 60                                * Mark for 60 mS.
```

The following command sends an ICLID message with the following information hard-coded as a string.

```
* Date & Time:    04/20  15:30
* Number: 01202824698
```

```
* Number WILLIAM CHARLES (note that we use the Hex value of Space <20>
* Non-printable bytes are entered with their Hex values as <xx>
* The # character at the end of the Send command is an indication to the script
* to automatically compute the checksum

SEND<80><28>04201530<02><0B>01202824698<07><0F>WILLIAM<20>CHARLES#
        DELAY 50
        CARRIER OFF          * Because SEND command leaves the carrier ON
        DELAY 200
        RING 400
        DELAY 200
        RING 400
        POLARITY NORMAL      * Restore polarity to its normal state
```

- **SENDCAS {Duration}**: Generates a nominal (i.e., 2130 and 2750 Hz) CPE Alert Tone (CAS) tone for the specified duration. The duration is measured in mS and cannot exceed 65,535. Typical values for the CAS tone are 75 – 85 mS for Telcordia Type II or 90-110 mS for ETSI Dual Tone Alerting Signal (DT-AS). Signal level for each tone and signal-to-noise ratio values are set using the LEVEL and SNR commands.

Note: In some ETSI implementations, the DT-AS signal is preceded by a polarity reversal .

Example 1:

```
        SENDCAS 80           * Generates a CAS signal for 80 mS
```

Example 2:

```
        POLARITY REVERSE     * Start of an ETSI call sequence  (line reversal followed
                             * by DT-AS)
        DELAY 150            * Must be greater than or equal to 100 mS
        SENDCAS 100          * Duration of DT-AS should be 100 mS +/-10 mS
        DELAY 80             * Delay from end of DT-AS until the start of FSK (must
                             * be greater than or equal to 45 mS)
        SEND …               * Start of FSK transmission
```

Note: In order to generate dual tones with varying amplitude levels, frequencies, and twist, use the TONE1FREQ, TONE1LEVEL, TONE2FREQ, TONE2LEVEL, and DUALTONE commands.

- **SENDDTMF {DTMF String}{Tone Duration}{Interdigit Delay}**: Generates the DTMF tones that correspond to the specified string according to the defined tone duration and Interdigit delay. The duration is measured in ms and cannot exceed 65,535.

  Example:

  SendDTMF 5125551234 150 100 * Generates the corresponding DTMF * string with a tone duration of 150 mS * and Interdigit delay of 100 mS

- **SENDFAX {Filename}:** Sends the specified file in FAX format. Typically used with the MAKECALL to simulate a FAX transmission.

  Example:

  SENDFAX C:\Test\Fax * Transmits the file fax1

  Note: An external application named SFAX.EXE must be present in the directory from which 3500MENU.EXE is running in order to use the SENDFAX command.

- **SENDFILE {Filename}:** Transmits the specified file using Bell 202 (default) or V23 FSK modem. The file may contain a test message or a special non-Caller ID / VMWI file to be downloaded to an external terminal. There is no limitation on the file size or data contents. You can use any standard DOS text or binary editor to generate this file. Data is transmitted at 1200 baud, no parity, and 1 stop bit.

  Example:

  SENDFILE C:\Test\Data1 * Transmits the contents of the file Data1

- **SENDSAS {Duration}:** Generates the 440 Hz Subscriber Alerting Signal (SAS) tone for the specified duration. The duration is measured in mS and cannot exceed 65,535. Signal level and signal-to-noise ratio values set using the LEVEL and SNR commands apply to the SAS tone.

  Example:

  SENDSAS 300 * Sends a SAS tone for 300 mS

- **SINGLE {ICLID}:** Sends the specified ICLID as an FSK Single Data Message Format packet. The ICLID parameter can be any data string (e.g., telephone number) or one of two letters currently defined by Telcordia (formerly Bellcore). The ICLID data is preceded by the nominal Channel Seizure (300 bits /250 mS of alternating 1's

and 0's) and Mark (150 mS) signals :

"O" (upper case O) to indicate an out-of-area call with no number information.
"P" (upper case P) to indicate a private call with no number information.

The required signaling, header, length, date, time and checksum are all automatically appended. The date and time are derived from the PC clock.

Example:

```
SINGLE 5551234          * Call from 555-1234
SINGLE O                * Out-of-Area call
SINGLE P                * Private call
```

- **SPACE {ON | OFF}:** Generates an FSK SPACE signal. This command is usually preceded by the MODEM and LEVEL commands.

Example:

```
MODEM V23               * Select V23 Modem mode
LEVEL 18                * Signal level is -18 dBm
SPACE ON                * Turn the Space signal ON
DELAY 3000              * Signal duration is 3 seconds
SPACE OFF               * Turn the Space signal OFF
```

- **SPACEFREQ {Num|+|-}:** Setts or increases/decreases the frequency at which the SPACE bits are sent in a VARFSKSEND string. Valid values range from 2000 to 2400 Hz. The Space frequency for Bell 202 systems is typically 2200 +/-22 Hz.

Examples:

```
SPACEFREQ 2180
SPACEFREQ -             *Decrease the space frequency by 1Hz
```

- **SPACELEVEL {Num}:** Sets the signal level at which the SPACE (logical 0) signal is set at in a VARFSKSEND command. Valid values range from 0 to -48 dBm, while the typical range is –12 to –36 dBm. The minus ('-') sign is optional.

Example:

```
SPACELEVEL  -20
```

- **SPACELEVEL {+ | -}:** Increases or decreases the absolute value of the signal level by 1 dB.

Example:

SPACELEVEL +
SPACELEVEL -

- **SPMLEVEL {+/-Num|+|-}:** Sets or increases/decreases the signal level at which an SPMTONE is sent. Valid values range from +10 to –38 dBm. The sign must be specified.

  Example:

  SPMLEVEL -20 * Sets the SPMLEVEL to – 20dBm
  SPMLEVEL +10 * Sets the SPMLEVEL to +10dBm

- **SPMTONE {Freq}{Duration}:** Generates an SPM tone according to the defined frequency and duration. Valid frequency values range from 10000 to 18000 Hz. The duration is measured in ms and cannot exceed 65,535.
  The tone level is set using the SPMLEVEL command.

  Example:

  SPMTONE 12000 1000 * Generates a 12kHz SPM tone for 1 second

- **SNR {Num}:** Sets the noise generator to provide the specified signal-to-noise ratio. Valid values range from 0 to 48 dB. Please use the NOISE command to turn off the noise generator or to program it.

  Example:

  LEVEL –22 * Sets signal level at -22 dBm
  SNR 30 * Sets the signal-to-noise ratio to 30 dB

- **SNR {+ | -}:** Increments or decrements the signal-to-noise ratio by 1 dB.

- **STARTCLI:** Begins the definition of a BT-based Calling Line Identification (CLI) packet. Message parameters are defined using additional script commands as outlined below. The duration of the Channel Seizure signal is 180 bits/150 mS, while the Mark duration is 60 mS.

  Example:

  STARTCLI
  parameter
  .
  .
  .
  parameter
  ENDCLI

  The ENDCLI command generates the CLI packet based on the parameter definitions (see the sample script, UK_BT.SCR).

The following script commands are used to define the parameters in a BT-based CLI packet. These commands are always used in conjunction with a STARTCLI and ENDCLI command. For a description of the data parameters used in these commands, please refer to the appropriate BT or ETSI specification.

- ***DATETIME {Num}:*** Date and time in the form MMDDHHMM. Time is based on a 24-hour clock.

  Example: DATETIME 11071530 * Nov 7, 3:30 PM

- ***CALLING {Num}:*** Calling number.

  Example: CALLING 01202824698

- ***CALLED {Num}:*** Called number.

  Example: CALLED 01202336479

- ***REASON {Expr}:*** Reason for number absence.

  Example: REASON O * Out of Area

- ***NAME {Expr}:*** Calling name information. Spaces are entered as <20>.

  Example: NAME JONES<20>STEVE

- ***NAMEREASON {Expr}:*** Reason for name absence.

  Example: NAMEREASON P * Private

- **STARTCWCID:** Begins the definition of a Telcordia-based Caller ID on Call Waiting (Type II) packet. Message parameters are defined using the same script commands used to define a MDMF packet (see MULTIPLE) . Please note that the ICLID data is preceded by a nominal Mark signal of only 80 bits and no Channel Seizure).

Example

```
STARTCWCID
    parameter
    .
    .
    .
    parameter
ENDCWCID
```

The ENDCWCID command generates the Caller ID on Call Waiting packet based on the parameter definitions.

- **SWITCHTONE {1 | 2 | 3 | 4 }{ON | OFF}:** Activates and deactivates the specified tone generator. The frequency and level of the tone are set using the TONE#LEVEL and TONE#FREQ script commands (where # = 1-4). Once activated, the tone will continue until the tone is deactivated.

Example:

```
TONE1LEVEL 30
TONE1FREQ 2150
SWITCHTONE 1 ON
DELAY 10000
 SWITCHTONE 1 OFF
```

Note: The applicable TONE#LEVEL and TONE#FREQ commands must precede the SWITCHTONE command in the script.

TONE1 {Duration}: Generates a tone for the specified duration using the first tone generator (#1). . The duration is measured in mS and cannot exceed 65,535. The frequency and level of the tone are set using the TONE1LEVEL and TONE1FREQ script commands.

Example:

```
TONE1 2000          * Generates tone for 2000 mS
```

Note: The TONE1LEVEL and TONE1FREQ commands must precede the TONE1 command in the script. If no TONE1FREQ command is present, the tone generator will assume 2130 Hz (i.e., CAS tone 1). If no TONE1LEVEL command is present, the tone generator will assume -20 dBm.

- **TONE2 {Duration}:** Generates a tone for the specified duration using the second tone generator (#2). The duration is measured in ms and cannot exceed 65,535.

The frequency and level of the tone are set using the TONE2LEVEL and TONE2FREQ script commands.

Example:

```
TONE2 2000          * Generates tone for 2000 mS
```

- **TONE#FREQ {Num|+|-}:** Sets or increases/decreases the frequency for tones generated using the corresponding tone generator (where # = 1-4). Valid values range from 10 to 4800 Hz.

Example:

TONE1FREQ 1250 * Sets frequency of tone generator #1 at 1250Hz
TONE1FREQ + * Increases the frequency of tone generator #1 by 1Hz

- **TONE#LEVEL {Num}:** Sets the amplitude for tones generated using the corresponding tone generator (where # = 1-4). Valid values range from 0 to -48 dBm. The minus ('-') sign is optional.

Example:

TONE1LEVEL -22 * Sets amplitude of tone generator #1 at -22dBm

Note: Signal levels expressed in dBm assume a 600-ohm impedance on the line. If this is not the case (e.g. Caller ID transmission into a high-impedance load), the actual signal placed on the line will vary, depending on the load. The signal level into a high-impedance load will be about 6 dB higher than the programmed dBm value.

- **TONE#LEVEL {+ | -}:** Increases or decreases the absolute value of the signal level by 1 dB.

Example:

TONE1LEVEL +
TONE1LEVEL –

- **VARBAUD {Baud rate|+|-}:** Sets or increases/decreases the baud rate to be used for FSK signals generated using the VARFSKSEND command. Valid values range from 1000 to 1400, while typical values for Bell 202 systems are 1200 +/- 12.

Example:

VARBAUD 1210

- **VARFSKCARRIER {ON | OFF}:** Turns the CARRIER signal ON and OFF at the frequency defined in a previous MARKFREQ command.

Example:

VARFSKCARRIER ON

- **VARFSKSEND {String}:** Sends the specified data string as an FSK modem signal using the FSK baud rate, Mark frequencies and levels, and Space frequencies and levels defined using the VARBAUD, MARKFREQ, MARKLEVEL, SPACEFREQ, and SPACELEVEL commands, respectively.

Example: VARFSKSEND <04><0F>050510305551234#

Note: The VARBAUD, MARKFREQ, MARKLEVEL, SPACEFREQ, and SPACELEVEL commands must precede the VARFSKSEND command in the script. The VARFSKSEND leaves the carrier ON. If you want to turn off the carrier, please use the VARFSKCARRIER OFF command.

Important: VARFSKSEND leaves the carrier on. The "VARFSKCARRIER OFF: command can be used to turn the carrier off.

- **VARFSKSPACE {ON | OFF}:** Turns the SPACE signal (break) ON and OFF at the frequency defined in a previous SPACEFREQ command.

Example:

VARFSKSPACE OFF

III) MEASUREMENT, LOGIC, AND SYSTEM COMMANDS

These commands allow the user to control selected PC peripherals, to specify loops, and time delays.

- **BEEP:** Generates a beep using the speaker on the 3500 PC subsystem.

- **CLOSECOMM:** Closes the COM port opened by a previous OPENCOMM command and disables data collection at the COM port (see READCOMM).

Example:

CLOSECOMM

Note: The 3500 is equipped with two standard PC-type COM ports. COM1 is free and accessible from the back of the unit, while COM2 is reserved to communicate with the front panel. Please do NOT try to use COM2, unless you want to talk directly to the front panel module through its published command set interface. Additional COM ports may be added to the 3500 by using commercially available serial communication modules for the PC/104 bus.

- **DELAY {Duration}:** Introduces a delay of the specified duration. The duration is measured in mS and cannot exceed 65,535. For longer delays, use multiple DELAY commands.

Example:

DELAY 1000 * Waits for 1 second before going to the next command

- **DISPLAY {String}:** Displays the character string on the PC monitor. Often used with the PAUSE command.

Example:

```
DISPLAY Press any key to continue
PAUSE                    * Waits for the user to press a key
```

- **DISPLAYDTMF:** Displays detected DTMF digits on the PC monitor and the Front Panel until the user presses a key on the keyboard.

Example:

```
DISPLAYDTMF
```

- **DISPLAYPULSE:** Displays the digits associated with detected pulses on the PC monitor and Front Panel until the user presses a key on the keyboard.

Example:

```
WAITFOROFFHOOK
DISPLAY Lift Handset and begin dialing
DISPLAYPULSE
```

- **DOCTOFAX {Filename}:** Converts the specified text file into FAX format (.f01)so the file may be sent using the SENDFAX command.

Example:

```
DOCTOFAX Testfax.txt        * Converts Testfax.txt into FAX format.
```

Note: An external application named DOCTOFAX.EXE and a file named FAX.FNT must be present in the current directory in order to utilize the DOCTOFAX command.

- **DTMFLOWFREQRANGE {Min, Max}:** Sets the acceptable minimum and maximum frequencies for the DTMF low frequency tones. IMPORTANT: This command requires that the optional DSP/104 card be installed in the 3500.

Example: DTMFLOWFREQRANGE 690 710

- **DTMFLOWLEVELRANGE {Min, Max}:** Sets the acceptable minimum and maximum levels for the DTMF low frequency tones. IMPORTANT: This command requires that the optional DSP/104 card be installed in the 3500.

Example: DTMFLOWLEVELRANGE -11 -1

- **DTMFHIGHFREQRANGE {MIN,MAX}:** Sets the acceptable minimum and maximum frequencies for the DTMF high frequency tones. IMPORTANT:This command requires that the optional DSP/104 card be installed in the 3500.

  Example: DTMFHIGHFREQRANGE 1210 1230

- **DTMFHIGHLEVELRANGE {MIN,MAX}**: Sets the acceptable minimum and maximum levels for the DTMF high frequency tones. IMPORTANT: This command requires that the optional DSP/104 card be installed in the 3500.

  Example: DTMFHIGHLEVELRANGE -11 –1

- **ENDIF:** Indicates the end of a group of commands to be executed based on a preceding IF command.

- **ENDLOOP:** Indicates the end of a group of commands to be repeated according to the number of iterations specified in a preceding LOOP command.

  Example:

```
LOOP 10                    * Loops for 10 iterations
    script command
    .
    .
    .

    script command
ENDLOOP
```

- **ENDTIMELOOP :** Indicates the end of a group of commands to be executed during the period specified in a preceding TIMELOOP command.

  Example:

```
TIMELOOP 50            * Loops for 500 minutes
    script command
                              .
    .
    .
    script command
ENDTIMELOOP
```

- **FAXTOVGA {Filename}:** Displays FAX format files on the PC monitor. The document will automatically

scroll from top (first page) to bottom (last page).

Example: FAXTOVGA TestFax * Displays Testfax.f01, Testfax.f02, etc.. (all pages)

Note: An external application named FAXVGA.EXE and data files named HUFFMAN.DAT, HUFFMANB.DAT, HUFFMANW.DAT, must be present in the directory from which 3500MENU.EXE is running in order to use the FAXTOVGA command.

- **IF {PASS | FAIL}:** Takes one parameter: PASS or FAIL. PASS and FAIL conditions are set by the last MEASUREPULSE or MEASUREDTMF command preceding the IF command. If the last command set the FAIL flag, then any commands enclosed between IF FAIL and ENDIF will be executed, otherwise these commands would be skipped. Similarly, if the last command set the PASS flag, then any commands enclosed between IF PASS and ENDIF will be executed, otherwise these commands would be skipped.

Example1:

```
DISPLAYPASSFAIL
PULSEMAKERANGE 35 45
PULSEBREAKRANGE 55 65
PULSEPPSRANGE 9 11
MEASUREPULSE 1          * Measures pulse parameters for a single digit
IF FAIL                 * If the above pulse limits are not met, the following
                        * commands will run until the ENDIF command is
                        * encountered
BEEP
DISPLAY Pulse Measurement failed. Press any key to continue
PAUSE
ENDIF
```

Example2:

```
DISPLAYPASSFAIL
DTMFLOWLEVELRANGE -5 –1       * Acceptable low tone amplitude range

DTMFHIGHLEVELRANGE -7 -14     * Acceptable high tone amplitude range

DTMFLOWFREQRANGE  690 710     * Acceptable low tone frequency range for
                                *  DTMF 1
DTMFHIGHFREQRANGE 1210 1230   * Acceptable high tone frequency range for
                                DTMF 1
MEASUREDTMF 1                 * Measures DTMF parameters for a single
```

```
                                                    * digit
        IF PASS                                     * If the above DTMF limits are met, the f
                                                    * following commands will run until the
                                                    *  ENDIF command is encountered

    DISPLAY DTMF Measurement Passed. Press any key to continue
                PAUSE
                ENDIF
```

- **LOOP {Num}:** Repeats the execution of a command or group of commands, according to the specified number of iterations. The ENDLOOP command indicates the end of the commands to be repeated. The maximum length of a loop is 65535.

Example:

```
LOOP 10                          * Loops for 10 iterations
    Script command
    .
    .
    .
    script command
ENDLOOP
```

The script language supports up to 10 nested loops. When executing a script with nested loops, the depth of each loop will be displayed when the corresponding ENDLOOP command is encountered.

Example:

```
LOOP 5                           * First loop begins
SNR 30
LEVEL -20
        LOOP 3                   * Second loop begins
        SNR+
                LOOP 5           * Third loop begins
                LEVEL -
                ENDLOOP          * Third loop ends
        ENDLOOP                  * Second loop ends
ENDLOOP                          * First loop ends
```

During execution, the ENDLOOP commands show the loops that they represent between parentheses. For example, the first ENDLOOP command in the script example will be flagged as ENDLOOP (3)

- **MEASUREDTMF [Num]:** Performs DTMF Digit Analysis for the specified number of digits, after which it will proceed to the next command. A parameter of 0 or no parameter will keep analyzing DTMF digits until the user presses ESC from a keyboard, or FAIL

from the Front Panel, or goes on-hook. When called, MEASUREDTMF will display any detected DTMF digits along with the frequency and amplitudes of each one of the dual tones on the Front Panel and on the optional VGA screen. MEASUREDTMF will look at the defined DTMF ranges and sets a PASS or FAIL flag that can be used with the IF command (see DTMF LOW LEVEL RANGE) DTMFHIGHLEVELRANGE, DTMFLOWFREQRANGE, AND DTMFHIGHFREQRANGE commands). IMPORTANT: This command requires that the optional DSP/104 card be installed in the 3500.

Example:

```
WAITFOROFFHOOK
MEASUREDTMF 3
```

Dialing 1 2 3 from a telephone would typically display values such as:

Digit (0-9,*,#,A-D)	*LG Freq* Hz	*LG Level* dBm	*HG Freq* Hz	*HG Level* dBm	*Tone Duration* mS	*Interdigit Duration* mS	*Twist* dB
1	699	-5.6	1210	-3.4	132	2321	2.2
2	699	-5.5	1339	-3.3	144	351	2.2
3	698	-5.6	1482	-3.3	144	189	2.3

- **MEASUREPULSE [Num]:** This command will display the specified number of dialed pulses along with the Pulse-Per-Second and Break/Make Ratio information. It terminates after the specified number of pulses are received, or when the user goes on-hook or presses ESC from the external keyboard. A parameter of 0 or no parameter will keep measuring pulses until the user goes on-hook, or presses ESC. MEASUREPULSE will look at the defined PPS and %Break ranges and sets a PASS or FAIL flag that can be used with the IF command.

Example:

```
WRITELCD1  Lift Handset and
WRITELCD2  Begin Pulse Dialing
WAITFOROFFHOOK
                MEASUREPULSE 1
```

Sample Response:

Num (0-9)	*Break/Make* mS	*PPS*	*%Break*
5	57/37 57/38 57/38 57/37 57/-	10.6	60.3

- **OPENCOMM {Port Number} {Baud Rate} {Parity}:** Opens a COM port and sets an interrupt routine that receives and buffers all data received on the COM port. Valid port numbers, baud rates, and parity values are as follows:

  Port number: 1 or 2
  Baud Rate: 300, 600, 1200, 2400, 4800, 9600, 19200
  Parity N, O, or E (None, Odd, or Even)

  Note: The COM port is always set for one (1) STOP bit.

  Example:

  OPENCOMM 1 9600 N

  Note: The 3500 is equipped with two standard PC-type COM ports. COM1 is free and accessible from the back of the unit, while COM2 is reserved to communicate with the front panel. Please do NOT try to use COM2, unless you want to talk directly to the front panel module through its published command set interface. Additional COM ports may be added to the 3500 by using off-the-shelf serial communication modules for the PC/104 bus.

- **OUTPUT {Address} {Byte}:** Outputs a byte to the specified IO address. All values are decimal. Special care must be taken not to conflict with existing IO addresses on the 3500 PC subsystem. Please contact Rochelle Communications, Inc. if you want to verify that a particular IO address is available.

  Example:

  OUTPUT 1000 150 * Outputs the byte 150 to I/O address 1000

- **PAUSE:** Pauses script execution until the user presses a key. Often used with the DISPLAY command

  Example:

  PAUSE
  DISPLAY Press any key to continue

- **PULSEBREAKRANGE {Min, Max}:** Sets the minimum and maximum duration for a valid pulse break, Expressed in mS.

  Example: PULSEBREAKRANGE 55 65

- **PULSEMAKERANGE {Min, Max}:** Sets the minimum and maximum duration for a valid pulse make, expressed in mS.

  Example: PULSEMAKERANGE 35 45

- **PULSEPPSRANGE {Min, Max}:** Sets the minimum and maximum number of valid pulses per seconds. Valid range is 1 to 20.

  Example: PULSEPPSRANGE 9 11

- **READCOMM [Filename]:** Displays all data received on the COM port specified in a previous OPENCOMM command. Data can also be written to or appended to a file by indicating a filename after the command.

  Examples:

  READCOMM * Displays info on screen
  READCOMM C:\Testfile * Appends data to a file named Testfile

- **READMETER {LINEAC | LINEDC}:** Measures the AC or DC voltage on the simulated line. The measured value is displayed on the PC monitor.

  Example:

  READMETER LINEDC * Displays the measured DC voltage
  AUDIOIN ON
  READMETER LINEAC * Displays the measured AC voltage

- **TIMELOOP {Duration}:** Repeats the execution of a command or group of commands for the specified duration. The duration is in <u>minutes</u>. While the loop is executing, the remaining time is displayed in the top left corner of the PC monitor. The ENDTIMELOOP command indicates the end of the commands to be repeated.

  Example:

  TIMELOOP 50 * Loops for 500 minutes
  script command
  .

.
.
script command
ENDTIMELOOP

- **WAITFORCALL**: Pauses script execution until the device under test goes off-hook and dials a number string ending with a '#'. This command is usually used with the RECEIVEFAX command.

  Example:

WAITFORCALL	* Waits for the device under test to go off-hook
	* and dial a number ending with a #.
RECEIVEFAX Testfax	* Receives a fax from the device under test and saves * it in a file named Testfax.

- **WAITFOROFFHOOK [timeout]**: Pauses script execution until the device under test goes off-hook (e.g., the user lifts the handset), or the user presses ESC to abort the script. An optional timeout parameters (1 – 65535) mS can be specified.

- **WAITFORONHOOK [timeout]**: Pauses script execution until the device under test goes on-hook (e.g., the user hangs up) Waits for the phone to go on-hook, or until the user presses ESC to abort the script. An optional timeout parameters (1 – 65535) mS can be specified.

- **WRITECOMM {String}:** Writes the specified string to the COM port specified in a previous OPENCOMM command. A separate WRITECOMM command must be included for each line of data as the command will only read to the end of the line (i.e., until a carriage return). Binary data should be enclosed between angle brackets in hex format: for example, a carriage return is <0D>.

  Example:

  WRITECOMM Hello World <0D><0A>
  WRITECOMM AT <0D>
  WRITECOMM 1

- **WRITEFILE {Filename} {Text String}:** Writes the text string to the specified file. If a file with the specified name does not exist, one is created. If the file exists, the text is appended as a new line.

Example: WRITEFILE Testfile.txt The current SNR is 20

Note: The filename and text string should not exceed 78 characters. For example, if the filename (including the extension) is 10 characters long, the text string must be less than or equal to 68 characters.

- **DISPLAYPASSFAIL:** In the 3500MENU.EXE, it causes script to add up all pass and fail results and display them on the PC monitor. In FP.EXE, it causes the PASS and FAIL counters on the front panel to reflect the total number of passed and failed tests.

MODEL 3500
FRONT PANEL SCRIPTS

INTRODUCTION

The Model 3500 is pre-loaded with sample scripts and other batch files that can be executed from the Front Panel. For instance, pressing the TEST3 button while in MODE1 will prompt the 3500 to look for and run TEST3 in the C:\MODE1 subdirectory. Priority is given based on the following file extensions:

TEST3.CMP -- Compiled script
TEST3.BAT DOS batch file program
TEST3.EXE DOS executable
TEST3.SCR Uncompiled script file

Users should rename any applications or script files that they wish to run to correspond to the push button name. For instance, MEASURE.EXE should be renamed TEST3.EXE and stored in the C:\MODE1 subdirectory if the user wants to associate it with the TEST# button. Please keep in mind that there may already be another TEST3 file in the selected directory and that it may have a higher priority. For instance, if both TEST3.CMP and TEST3.SCR exist in the C:\MODE1 subdirectory, and the user edits and updates TEST3.SCR, he/she must re-compile that script flle, or rename the old TEST3.CMP file.

The table below lists the sample scripts that are pre-loaded on the subdirectories that are associated with the Front Panel:

Mode	Button	Title
1	TEST 1	5 Type I Caller ID Calls.
1	TEST 2	5 Type I Caller ID Calls with variable FSK Levels and SNR
1	TEST 3	Ring Level and Frequency Test
1	TEST 4	Type II Caller ID Test
1	TEST 5	Callback (Redial) Feature Test
1	TEST 6	Audio Example
1	TEST7	DTMF Digit Analysis (Requires DSP/104 Card)
2	TEST 1	DTMF Generation Test
2	TEST 2	Ring Detect Tests
2	TEST 3	Caller ID Type I and Type II Tests
2	TEST 4	Dial Pulse (PASS/FAIL)
2	TEST 5	DTMF Digit Test (PASS/FAIL) - Requires DSP/104 Card
2	TEST 6	BT Caller ID Simulation

2	TEST8	General Burn-in Test
3	TEST 1	Visual Message Waiting Test
3	TEST 2	FAX Send and Receive Test
3	TEST 3	Japan Caller ID
3	TEST 4	Answering Machine – DTMF Detection and Rejection
3	TEST 5	Answering Machine – Dial Tone Detection
3	TEST 6	UK Caller ID and Answering Machine demo

MODE 1: TEST 1

```
* TITLE: 5 Calls Test                          DATE: 7 July 1998
* This script generates 5 calls with Multiple Message Caller ID.
* The name field info corresponds to the call number to allow operators
* to quickly determine which, if any, calls were missed.  The unit under
* test should display 5 new calls at the completion of the test.  A script
* such as this one would typically include 50 or more calls.  The script
* tests the units memory and determines if the unit is missing calls.


** Initialization
ClearLCD                        * Clears LCD

WriteLcd1   5 CALLS TEST    * Displays test title on LCD
WriteLcd2   Type I Tests
LedBlink 1                      * Causes the LED on TEST 1 button to blink


MODEM BELL202                   * Sets FSK Modem Type to Bell 202
LEVEL 20                        * Sets FSK Signal Level to -20 dBm
SNR 40                          * Sets Signal-to-Noise Ratio at 40 dB
DELAY 2000                      * Delay for 2 seconds

** Start of call simulation
ClearLcd                        * Clears LCD
WriteLcd1 CALL ONE              * Displays CALL ONE on LCD
RING 1000                       * Ring for 1 second
DELAY 500                       * Delay for 500 mS
MULTIPLE                        * Start of Multiple Message Caller ID packet
DateTime 07061345               * Sets Date and Time parameter to 6 July at 1:45 PM
ICLID 5125551212                * Sets Caller ID Number parameter
NAME ONE                        * Sets Caller ID Name parameter
ENDMULTIPLE                     * End of Multiple Message Caller ID packet
DELAY 5000                      * Delay for 5 second
*
ClearLcd
WriteLcd1 CALL TWO
RING 1000
DELAY 500
MULTIPLE
ICLID 5125551212
NAME TWO
ENDMULTIPLE
DELAY 5000
*
```

```
ClearLcd
WriteLcd1 CALL THREE
RING 1000
DELAY 500
MULTIPLE
ICLID 5125551212

NAME THREE
ENDMULTIPLE
DELAY 5000
*
ClearLcd
WriteLcd1 CALL FOUR
RING 1000
DELAY 500
MULTIPLE
ICLID 5125551212
NAME FOUR
ENDMULTIPLE
DELAY 5000
*
ClearLcd
WriteLcd1 CALL FIVE
RING 1000
DELAY 500
MULTIPLE
ICLID 5125551212
NAME FIVE
ENDMULTIPLE
DELAY 5000
*
ClearLcd                        * Clears the LCD
WriteLcd1 TEST COMPLETE         * Displays TEST COMPLETE on LCD
LEDOFF 1                  * Turns off the LED on TEST 1 button

** End of script
```

MODE 1: TEST 2

```
* TITLE: Calls w/ various FSK signal levels and Signal-to-Noise Ratios.    DATE: 7 July 1998
* This script generates 5 Multiple Message Caller ID calls with varying FSK signal levels
* and Signal-to-Noise Ratios.  The name field info for each call indicates the settings
* for FSK Level and SNR for easy reference.

** Initialization
ClearLCD                        * Clears the LCD

WriteLcd1   CALLS W/ VARIOUS    * Displays the test title on the LCD (Line 1)
WriteLcd2    LEVELS AND SNR     * Displays the test title on the LCD (Line 2)
LEDBlink 2                      * Causes the LED on the TEST 2 button to blink
DELAY 3000                      * Delay for 3 seconds
ClearLCD                        * Clears the LCD

** First Call

WriteLcd1 CALL ONE              * Displays CALL ONE on the LCD (Line 1)
WriteLcd2 LEVEL:-5 SNR:40       * Displays the FSK level and the SNR on the LCD (Line
2)

** Set Level and SNR

Level 5                         * Sets the FSK signal level to -5 dBm
SNR 40                          * Sets the Signal-to-Noise ratio to 40 dB

** Start of call sequence

RING 500                        * Ring for 500 mS
Delay 500                       * Delay for 500 mS
MULTIPLE                        * Start of Multiple Message Caller ID packet
  DateTime    06151345          * Sets Date and Time parameter to 15 June at 1:45 PM
  ICLID       6175556789        * Sets Caller ID Number parameter
  NAME  LVL5<20>SNR40            Sets Caller ID Name parameter (Hex 20=space)
ENDMULTIPLE                     * End of Multiple Message Caller ID packet
Delay 1000                      * Delay for 1 second


** Second Call

ClearLCD
WriteLcd1 CALL TWO
WriteLcd2 LEVEL:-15 SNR:25

Level 15                        * Sets the FSK signal level to -15 dBm
```

```
SNR 25                          * Sets the Signal-to-Noise ratio to 25 dB

** Start of call sequence


RING 500
Delay 500
MULTIPLE
  DateTime    06151345
  ICLID       6175556789
  NAME  LVL15<20>SNR25
ENDMULTIPLE
Delay 1000
** Third Call

ClearLCD
WriteLcd1 CALL THREE
WriteLcd2 LEVEL:-15 SNR:35

** Set Level and SNR

Level 15                        * Sets the FSK signal level to -15 dBm
SNR 35                          * Sets the Signal-to-Noise ratio to 35 dB

** Start of call sequence

RING 500
Delay 500
MULTIPLE
  DateTime    06151348
  ICLID       7135551234
  NAME  LVL15<20>SNR35
ENDMULTIPLE
Delay 1000


** Fourth Call

ClearLCD
WriteLcd1 CALL FOUR
WriteLcd2 LEVEL:-25 SNR:25

** Set Level and SNR

Level 25                        * Sets the FSK signal level to -25 dBm
SNR 25                          * Sets the Signal-to-Noise ratio to 25 dB
```

```
** Start of call sequence

RING 500
Delay 500
MULTIPLE
  DateTime    06151405
  ICLID       3055551234
  NAME  LVL25<20>SNR25
ENDMULTIPLE
Delay 1000



** Fifth Call

ClearLCD
WriteLcd1 CALL FIVE
WriteLcd2 LEVEL:-35 SNR:18

** Set Level and SNR

Level 35                    * Sets the FSK signal level to -35 dBm
SNR 18                      * Set the Signal-to-Noise ratio to 18 dB
** Start of call sequence

RING 500
Delay 500
MULTIPLE
  DateTime    06151405
  ICLID       6175551234
  NAME  LVL35<20>SNR18
ENDMULTIPLE
Delay 1000

ClearLCD
WriteLcd1 TEST COMPLETE     * Displays TEST COMPLETE on the LCD (Line 1)
LEDOFF 2                    * Turns the LED on the TEST 2 button off
** End of script
```

MODE 1: TEST 3

* TITLE: Ring Level and Frequency Test DATE: 7 July 1998
* This script generates 5 Multiple Message Caller ID calls with varying
* ring levels and frequencies. The name field info for each call indicates
* the settings for Ring Level and Frequency for easy reference.

** Initialization

```
Level 20                        * Sets the FSK signal level to -20 dBm
SNR 30                          * Sets the Signal-to-Noise Ratio to 30 dB
Polarity Normal                 * Sets Polarity to Normal

ClearLCD                        * Clears the LCD
LEDBlink 3                      * Causes the LED on the TEST 3 button to blink
WriteLCD1  RING LEVEL & FREQ    * Displays the test title on the LCD (Line 1)
WriteLcd2       TEST            * Displays the test title on the LCD (Line 2)
Delay 2000                      * Delay for 2 seconds
```

*** First Call

```
WriteLCD1 LOW RING #1           * Displays LOW RING #1 on the LCD (Line 1)
WriteLcd2 LEVEL: 35VACrms       * Displays LEVEL: 35 VACrms on the LCD (Line 2)
```

** Set Level

```
RINGLEVEL 35                    * Sets the Ring Level to 35 VACrms
```

** Begin Call Sequence

```
RING 1000                       * Ring for 1 second
Delay 500                       * Delay for 500 mS
MULTIPLE                        * Start of Multiple Message Caller ID packet
DateTime 06151505               * Sets Date and Time parameter to 15 June at 3:05PM
                                * (MMDDHHMM)
MULTIPLE
ICLID 5123398188                * Sets the Caller ID Number parameter
NAME RINGLVL<20>35              * Sets the Caller ID Name parameter
ENDMULTIPLE                     * End of Multiple Message Caller ID packet
```

*** Second Call

```
Delay 2000
ClearLCD
WriteLcd1 LOW RING #2
WriteLCD2 LEVEL: 25VACrms

** Set Level

RINGLEVEL 25                    * Sets the Ring Level to 25 VACrms


** Begin Call Sequence

RING 1000
Delay 500
MULTIPLE
DateTime 06151508
ICLID 2125551234
NAME RINGLVL<20>25
ENDMULTIPLE


*** Third Call

Delay 2000
ClearLCD
WriteLCD1 HIGH RING #1
WriteLCD2 LEVEL: 70VACrms

** Set Level

RINGLEVEL 70                    * Sets the Ring Level to 70 VACrms

** Begin Call Sequence

RING 1000
Delay 500
MULTIPLE
DateTime 06151510
ICLID 3035551234
NAME RINGLVL<20>70
ENDMULTIPLE


*** Fourth Call

Delay 2000
ClearLCD
WriteLCD1 HIGH RING #2
```

```
WriteLCD2 LEVEL: 80VACrms

** Set Level

RINGLEVEL 80                    * Sets the Ring Level to 80 VACrms

** Begin Call Sequence

RING 1000
Delay 500
MULTIPLE


DateTime 06151515
ICLID 3065556432
NAME RINGLVL<20>80
ENDMULTIPLE


*** Fifth Call

Delay 2000
ClearLCD
WriteLCD1 LOW RING FREQ
WriteLCD2 FREQ: 20 Hz


** Set Frequency (Set Level back to default)

RINGFREQ 20                     * Sets the Ring Frequency to 20 Hz
RINGLEVEL 50

** Begin Call Sequence

RING 1000
Delay 500
MULTIPLE
DateTime 06151520
ICLID 7085556432
NAME RINGFREQ<20>20
ENDMULTIPLE

ClearLCD
WriteLcd1 TEST COMPLETE         * Displays TEST COMPLETE on LCD (Line 1)
LEDOFF 3                        * Turns the LED on the TEST 3 button off

*****END SCRIPT
```

MODE 1 TEST 4

```
** TITLE: Type II Caller ID Test                    DATE: 7 July 1998
** This script allows the user to simulate a Type-II Caller ID on
** Call Waiting message.  Critical timing parameters and signal levels
** are programmable.

** Initialization

ClearLCD                        * Clears LCD
WriteLCD1 TYPE II CALLER ID     * Displays test title on LCD (Line 1)
WriteLCD2       TEST            * Displays test title on LCD (Line 2)
LedBlink 4                      * Causes the LED on the TEST 4 button to blink
Delay 2000                      * Delay for 2 seconds

MODEM BELL202                   * Selects Bell 202 Modem Type
Level 20                        * Sets FSK Signal Level to -20 dBm
SNR 30                          * Sets Signal-to-Noise Ratio to 30 dB
Tone1freq 2130                  * Defines CAS Tone Frequency and Amplitude (Tone 1)
Tone2freq 2750                  * Defines CAS Tone Frequency and Amplitude (Tone 2)

** Lift Handset to receive Type II Caller ID

ClearLCD
WriteLCD1 LIFT HANDSET          * Displays LIFT HANDSET on LCD (Line 1)
WriteLCD2 PRESS FAIL TO ABORT   * Displays PRESS FAIL TO ABORT on LCD (Line 2)

WaitForOffHook                  * Waits for operator to lift handset
LineCurrent 40                  * Sets Line Current to 40 mA

*** Test 1

ClearLCD
WriteLcd1 TYPE II TEST 1
WriteLcd2 CAS = -10, -15 dBm
Delay 3000

** Set CAS Levels

  Tone1Level 10                 * Defines CAS Tone Level (Tone 1)
  Tone2Level 15                 * Defines CAS Tone Level (Tone 2)

** Begin Sequence
```

```
  SendSAS 300                    * Generate Call Waiting SAS Alerting Signal for 300 mS
  Dualtone 80                    * Generate CAS tone (2130Hz and 2750Hz) for 80 mS
  DtmfAck D                      * Wait for CPE to send ack signal (DTMF D) -- function
                                 * returns approx. 40 mS after the end of the DTMF tone
                                 * is detected

 DELAY 40                  * Delay for an additional 40 mS (80 mS from DTMF D)
  CARRIER ON                     * Turn FSK Modem Carrier on
  Delay 60                       * Delay for 60 mS

  StartCWCID                     * Start of CWCID packet
    ICLID 7035558753             * Sets Caller ID Number parameter
    NAME CASLVL<20>-10,-15       * Sets Caller ID Name parameter (Hex 20=space)
  EndCWCID                       * End of CWCID packet


*** Test 2

Delay 2000
ClearLCD
WriteLcd1 TYPE II TEST 2
WriteLcd2 CAS = -15, -10 dBm

** Set CAS Levels

  Tone1Level 15
  Tone2Level 10

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60

  StartCWCID
    ICLID 6085558753
    NAME CASLVL<20>-15,-10
  EndCWCID


*** Test 3

Delay 2000
ClearLCD
```

```
WriteLcd1 TYPE II TEST 3
WriteLcd2 CAS = -20, -15 dBm

** Set CAS Levels

  Tone1Level 20
  Tone2Level 15

** Begin Sequence
  SendSAS 300
  Dualtone 80
  DtmfAck D

DELAY 40
  CARRIER ON
  Delay 60

  StartCWCID
    ICLID 9032465555
    NAME CASLVL<20>-20,-15
  EndCWCID
*** Test 4

Delay 2000
ClearLCD
WriteLcd1 TYPE II TEST 4
WriteLcd2 CAS = -18, -20 dBm

** Set CAS Levels

  Tone1Level 18
  Tone2Level 20

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60
  StartCWCID
    DateTime  04151405
    ICLID     2145551234
    NAME      CASLVL<20>-18,-20
  EndCWCID
```

```
*** Test 5

Delay 2000
ClearLCD
WriteLcd1 TYPE II TEST 5
WriteLcd2 CAS = -20, -25 dBm

** Set CAS Levels

  Tone1Level 20
  Tone2Level 25

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40

 CARRIER ON
  Delay 60

  StartCWCID
    ICLID 8045556789
    NAME CASLVL<20>-20,-25
  EndCWCID


*** Test 6

Delay 2000
ClearLCD
WriteLcd1 TYPE II TEST 6
WriteLcd2 CAS = -25, -25 dBm

** Set CAS Levels

  Tone1Level 25
  Tone2Level 25

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60
```

```
StartCWCID
  ICLID 9045554321
  NAME CASLVL<20>-25,-25
EndCWCID


ClearLCD                        * Clears LCD
WriteLCD1 TEST COMPLETE         * Displays TEST COMPLETE on LCD (Line 1)
LEDOFF 4                        * Turns the LED on the TEST 4 button off
LineCurrent 10                  * Sets Line Current to 10 mA

** End of script
```

MODE 1 TEST 5

```
* TITLE: Callback Feature Test                    DATE: 7 July 1998
* This script tests the callback feature of such equipped Caller ID units.
* A single message Caller ID call is first received.  The operator is then
* instructed to press the CallBack/Redial button.  The DTMF digits are compared
* to the known Caller ID digits sent.


** Initialization

ClearLcd                          * Clears the LCD

WriteLcd1   CALLBACK FEATURE      * Displays the test title on the LCD (Line 1)
WriteLCD2       TEST              * Displays the test title on the LCD (Line 2)
LEDBlink 5                        * Causes the LED on the TEST 5 button to blink
Delay 1000                        * Delay for 1 second

Level 20                          * Sets the FSK Signal Level to 20 dBm
SNR 30                            * Sets the Signal-to-Noise Ratio to 30 dB


*** Single Message Caller ID sent to unit

ClearLCD
WriteLCD1   SEND CALLER ID        * Displays SEND CALLER ID on LCD (Line 1)

** Begin Call Sequence

RING 500                          * Ring for 500 mS
DELAY 500                         * Delay for 500 mS
SINGLE 6781234                    * Define Single Message Caller ID packet


*** CallBack

** Set Dial Tone Frequency

Tone1Freq 350                     * Defines Dial Tone Frequency (Tone 1)
Tone2Freq 440                     * Defines Dial Tone Frequency (Tone 2)

** Begin Sequence

DELAY 2000                        * Delay for 2 seconds
ClearLCD                          * Clears LCD
```

```
WriteLCD1    PRESS CALLBACK          * Displays PRESS CALLBACK on the LCD (Line 1)

Noise Off                            * Turn noise off
WaitForOffHook                       * Waits for the unit to go off-hook
LineCurrent 40                       * Sets the Line Current to 40 mA
SwitchTone 1 ON                      * Turns on Dial Tone (Tone 1)

SwitchTone 2 ON                      * Turns on Dial Tone (Tone 2)
WriteLcd1
                                     * Clears LCD line 1 so that digits may echo
*** GetDtmfStr receives, compares, and displays (echoes) DTMF digit
GetDtmfStr 6                         * Receives first digit so that dial tone can then be
terminated
SwitchTone 1 OFF                     * Turns off Dial Tone (Tone 1)
SwitchTone 2 OFF                     * Turns off Dial Tone (Tone 2)
GetDtmfStr 781234                    * Receives and echoes remainder of DTMF string

DELAY 3000                           * Delay for 3 seconds

ClearLcd
WriteLcd1 CALLBACK SUCCESSFUL   * Displays CALLBACK SUCCESSFUL on LCD (Line 1)
DELAY 1500                      * Delay for 1.5 seconds


ClearLcd                             * Clears LCD
WriteLcd1 TEST COMPLETE              * Displays TEST COMPLETE on LCD (Line 1)
LEDOFF 5                             * Turns LED on the TEST 5 button off
Linecurrent 10                       * Sets the Line Current to 10 mA

*** End of Script
```

MODE 1 TEST 6

```
* TITLE: Audio Example                                    DATE: 10 July 1998
* This script plays a WAV file through the unit's audio output.

** Initialization

LineCurrent 30
ClearLcd
WriteLcd1    AUDIO EXAMPLE
WriteaLcd2  PLEASE LIFT HANDSET
LedBlink 6
WaitforOfHook
WriteLcd2
Delay 500
Playwave greeting.msg

ClearLcd
WriteLcd1      COMPLETE
Delay 500
LedOff 6

** End of Script
```

MODE 1 TEST 7

```
* TITLE: DTMF Digit Analysis (Requires DSP/104 Card) DATE: 7 July 1998
* This script performs DTMF digit analysis. It requires the presence
* of the Rochelle DSP/104  Card.
* The PASS counter on the front panel shows the total number of digits


LineCurrent 30
WriteLcd1   DTMF DIGIT ANALYSIS
WriteLcd2   PLEASE LIFT HANDSET
LEDBLink 7
Waitforofhook
ClearLcd
WriteLcd1   DIAL DTMF DIGITS
Delay 1000
MeasureDtmf
WriteLcd1   END OF TEST
Write Lcd2
Delay 1000
LEDOFF 7
WriteCounter1
ClearLcd
**   End of Script
```

MODE 2 TEST 1

```
* TITLE: DTMF Telephone Keypad Test                    DATE: 7 July 1998
* This script tests the DTMF generation of a telephone at three different
* line current settings.

** Initialization

ClearLcd                          * Clears the LCD
WriteLcd1   DTMF Keypad Test      * Displays the test title on the LCD (Line 1)
WriteLcd2       TEST              * Displays the test title on the LCD (line 2)
LEDBlink 1                        * Causes the LED on the TEST 1 button to blink

Tone1Freq 350                     * Defines the Dial Tone Frequency (Tone 1)
Tone2Freq 440                     * Defines the Dial Tone Frequency (Tone 2)

Delay 1000                        * Delay for 1 seconds


*** Test 1

CLearLCD                          * Clears the LCD
WriteLcd1    DTMF TEST #1         * Displays DTMF TEST #1 on the LCD
WriteLcd2  LINE CURRENT: 18mA     * Displays LINE CURRENT: 18mA on the LCD

Delay 1000                        * Delay for 1 second
Noise Off                         * Turns noise off

ClearLcd                          * Clears the LCD
WriteLcd1    LIFT HANDSET     * Displays LIFT HANDSET on the LCD (Line 1)

** Set Line Current

LINECURRENT 18                    * Sets the Line Current to 18 mA

WaitForOffHook                    * Waits for the operator to lift the handset
SwitchTone 1 ON                   * Turns on Dial Tone (Tone 1)
SwitchTone 2 ON                   * Turns on Dial Tone (Tone 2)

Delay 500                    * Delay for 500 mS

ClearLcD                     * Clears the LCD
WriteLcd1  DIAL 1234567890*#      * Displays DIAL 1234567890*# on the LCD (Line 1)
WriteLcd2
                                  * Clears LCD line 2 so that digits may echo
** GetDtmfStr receives, compares, and displays (echoes) DTMF digit
```

```
GetDtmfStr 1                    * Receives first digit so that dial tone can be terminated
SwitchTone 1 OFF                * Turns off Dial Tone (Tone 1)
SwitchTone 2 OFF                * Turns off Dial Tone (Tone 2)

GetDtmfStr 234567890*#          * Receives and echoes remainder of DTMF string


Delay 500                   * Delay for 500 mS

ClearLcd                        * Clears LCD
WriteLcd1   TEST #1 COMPLETE    * Displays TEST #1 COMPLETE on LCD (Line 1)
WriteLcd2       HANG UP         * Displays HANG UP on LCD (Line 2)
WaitForOnHook                   * Waits for the operator to hang up
LineCurrent 10                  * Sets the Line Current back to 10 mA

DELAY 1000                      * Delay for 1 second

*** Test 2

CLearLCD
WriteLcd1     DTMF TEST #2
WriteLcd2  LINE CURRENT: 40mA

Delay 1000
ClearLcd
WriteLcd1     LIFT HANDSET

** Set Line Current

LINECURRENT 40

WaitForOffHook
SwitchTone 1 ON
SwitchTone 2 ON

Delay 500

ClearLcd
WriteLcd1  DIAL 1234567890*#
WriteLcd2
GetDtmfStr 1
SwitchTone 1 OFF
SwitchTone 2 OFF
GetDtmfStr 234567890*#
Delay 500
ClearLcd
WriteLcd1   TEST #2 COMPLETE
WriteLcd2       HANG UP
```

```
WaitForOnHook
DELAY 1000

*** Test 3

CLearLCD
WriteLcd1     DTMF TEST #3
WriteLcd2  LINE CURRENT: 80mA
Delay 1000
ClearLcd
WriteLcd1     LIFT HANDSET

** Set Line Current

LINECURRENT 80
WaitForOffHook
SwitchTone 1 ON
SwitchTone 2 ON

Delay 500

ClearLcd
WriteLcd1  DIAL 1234567890*#
WriteLcd2
GetDtmfStr 1
SwitchTone 1 OFF
SwitchTone 2 OFF
GetDtmfStr 234567890*#                  * Receives and echoes remainder of DTMF string
Delay 500
ClearLcd
WriteLcd1   TEST #3 COMPLETE
WriteLcd2       HANG UP
WaitForOnHook
LineCurrent 10
CLEARLCD
WRITELCD1 TEST COMPLETE
LEDOff 1

*** End of Script
```

MODE 2 TEST 2

```
* TITLE: Ring Detect Tests                                    DATE: 7 July 1998
* This script provides seven different rings with various ring levels
* and frequencies.  The first three rings should not be detected and the
* last four should be.

** Initialization

ClearLCD                          * Clears the LCD
LEDBlink 2                        * Causes the LED on the TEST 2 button to blink
WriteLCD1 RING DETECT TESTS       * Displays the test title on the LCD (Line 1)

Delay 2000                        * Delay for 2 seconds


*** Test 1

ClearLcd                          * Clears the LCD
WriteLCD1 FALSE RING 1        * Displays FALSE RING 1 on the LCD (Line 1)
WriteLcd2 25Vrms @ 20Hz           * Displays 25Vrms @ 20Hz on the LCD (Line 2)

** Set Freq and Level

RINGFREQ 20                       * Sets the Ring Frequency to 20 Hz
RINGLEVEL 25                      * Sets the Ring Level to 25 Vrms

** Begin Ring

RING                              * Ring for 2 seconds

Delay 3000                        * Delay for 3 seconds


*** Test 2

ClearLCD
WriteLcd1 FALSE RING 2
WriteLCD2 15Vrms @ 60Hz

** Set Freq and Level

RINGFREQ 60
RINGLEVEL 20

** Begin Ring
```

RING

Delay 3000

*** Test 3

ClearLCD
WriteLCD1 FALSE RING 3
WriteLCD2 80Vrms @ 50mS

** Set Level

RINGLEVEL 80

** Begin Ring

RING 50 * Ring for 50 mS

Delay 3000

*** Test 4

ClearLCD
WriteLCD1 LOW RING 1
WriteLCD2 45Vrms @ 25Hz

** Set Freq and Level

RINGFREQ 25
RINGLEVEL 45

** Begin Ring

RING

Delay 3000

*** Test 5

ClearLCD
WriteLCD1 LOW RING 2
WriteLCD2 45Vrms @ 60Hz

** Set Freq and Level

RINGFREQ 60
RINGLEVEL 45

** Begin Ring

RING

DELAY 3000

*** Test 6

ClearLCD
WriteLCD1 HIGH RING 1
WriteLCD2 80Vrms @ 20Hz

** Set Freq and Level

RINGFREQ 20
RINGLEVEL 80

** Begin Ring

RING

Delay 3000

*** Test 7

ClearLCD
WriteLCD1 HIGH RING 2
WriteLCD2 80Vrms @ 60 Hz

** Set Freq and Level

RINGLEVEL 80
RINGFREQ 60

** Begin Ring

RING

Delay 1000

```
ClearLcd                        * Clears LCD
WriteLcd1 TEST COMPLETE         * Displays TEST COMPLETE on LCD (Line 1)
LEDOFF 2                        * Turns LED on the TEST 2 button off
LINECURRENT 10                  * Sets the Line Current to 10 mA

*****END SCRIPT
```

MODE 2 TEST 3

```
* TITLE: Caller ID Tests                                    DATE: 7 July 1998
* This script tests several different aspects of both Type I and Type II
* Caller ID.  The script transmits a Single Message Caller ID packet followed
* by a Multiple Message Caller ID packet.  Then five CIDCW tests are performed
* with varying CAS levels and frequencies.  Finally, two false CIDCW packets
* are sent.


** Initialization

ClearLCD                        * Clears the LCD
WriteLCD1   CALLER ID TESTS     * Displays the test title on the LCD (Line 1)
LedBlink 3                      * Causes the LED on the TEST 3 button to blink


MODEM BELL202                   * Selects Bell 202 Modem Type
Level 20                        * Sets the FSK Signal Level to -20 dBm
SNR 30                          * Sets the Signal-to-Noise Ratio to 30 dB
LineCurrent 25                  * Sets the Line Current to 25 mA
RingLevel 55                    * Sets the Ring Level to 55 VACrms
RingFreq 20                     * Sets the Ring Frequency to 20 Hz
Polarity Normal                 * Sets the Polarity to Normal

Delay 1000


*** Single Message Caller ID

ClearLCD
WriteLCD1 CALLER ID #1
WriteLcd2 SINGLE MESSAGE


** Start of call sequence

RING 1000                       * Ring for 1 second
DELAY 500                       * Delay for 500 mS
Single 2135558763               * Defines Single Message Caller ID packet


DELAY 2000


*** Multiple Message Caller ID
```

```
ClearLCD
WriteLCD1  CALLER ID #2
WriteLcd2  MULTIPLE MESSAGE


RING                          * Ring for 2 seconds
DELAY 500                     * Delay for 500 mS
MULTIPLE                      * Start of Multiple Message Caller ID packet
DateTime 07071305              Sets Date and Time parameter
ICLID 5125551234              * Sets Caller ID Number parameter
NAME HOPE<20>BOB              * Sets Caller ID Name parameter
ENDMULTIPLE                   * End of Multiple Message Caller ID packet

DELAY 2000


*** CIDCW

ClearLCD
WriteLCD1 CIDCW TESTS

Delay 2000

WriteLCD2 LIFT HANDSET

WaitForOffHook                * Waits for operator to lift the handset
LineCurrent 40                * Sets the Line Current to 40 mA
Delay 500

*** #1
ClearLCD
WriteLcd1 CIDCW #1
WriteLcd2 CAS = -10, -15
Delay 3000

** Set CAS Levels and Frequencies

Tone1freq 2130                * Sets CAS Tone Frequency (Tone 1)
Tone2freq 2750                * Sets CAS Tone Frequency (Tone 2)
Tone1Level 10                 * Sets CAS Tone Level (Tone 1)
Tone2Level 15                 * Sets CAS Tone Level (Tone 2)

** Begin Sequence

   SendSAS 300                * Generate Call Waiting SAS Alert Signal for 300 mS
```

```
   Dualtone 80                    * Generate CAS tone for 80 mS
   DtmfAck D                      * Waits for CPE to send ack signal (DTMF D) -- function
                                  * returns approx. 40 mS after the end of the DTMF tone
                                  * is detected
   DELAY 40                       * Wait for an additional 40 mS (80 mS total from
                        * DTMF D)
   CARRIER ON                     * Turns FSK Modem Carrier ON
   Delay 60                       * Delay for 60 mS

   StartCWCID                     * Start of CWCID packet
   DateTime  04151345             * Sets Date and Time parameter
   ICLID 1111111111               * Sets Caller ID Number parameter

  NAME -10dBm<20>-15dBm           * Sets Caller ID Name parameter (Hex 20=space)
  EndCWCID                        * End of CWCID packet
Delay 2000


*** #2

ClearLCD
WriteLcd1 CIDCW #2
WriteLcd2 CAS = -25, -25

** Set CAS Levels and Frequencies

Tone1Level 25
Tone2Level 25

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60

  StartCWCID
    DateTime  04151355
    ICLID     2222222222
    NAME      -25dBm<20>-25dBm
  EndCWCID


Delay 2000
```

```
*** #3

ClearLCD
WriteLcd1 CIDCW #3
WriteLcd2 CAS = -25, -12

** Set CAS Levels and Frequencies

Tone1Level 25

Tone2Level 12

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40

  CARRIER ON
  Delay 60

  StartCWCID
    DateTime  04151400
    ICLID     3333333333
    NAME      -25dBm<20>-12dBm
  EndCWCID


Delay 2000

*** #4

ClearLCD
WriteLcd1 CIDCW #4
WriteLcd2 CAS = -12, -25

** Set CAS Levels and Frequencies

Tone1Level 12
Tone2Level 25

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
```

```
  CARRIER ON
  Delay 60

  StartCWCID
    DateTime  04151405
    ICLID     4444444444
    NAME      -12dBm<20>-25dBm
  EndCWCID

Delay 2000


*** #5

ClearLCD
WriteLcd1 CIDCW #5
WriteLcd2 CAS = 2150Hz,2720Hz

** Set CAS Levels and Frequencies

Tone1Level 10
Tone2Level 15
TONE1FREQ 2150
TONE2FREQ 2720

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60

  StartCWCID
    DateTime  04151405
    ICLID     5555555555
    NAME      2150Hz<20>2720Hz
  EndCWCID


DELAY 2000


*** FALSE CIDCW

ClearLCD
WriteLCD1 FALSE CIDCW
```

```
Delay 2000


*** #1

ClearLCD
WriteLcd1 FALSE CIDCW #1
WriteLcd2 CAS = -36, -36

** Set CAS Levels and Frequencies

TONE1LEVEL 36
TONE2LEVEL 36
TONE1FREQ 2130
TONE2FREQ 2750

** Begin Sequence

  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60

  StartCWCID
    DateTime  04151405
    ICLID     0000000000
    NAME      -36dBm<20>-36dBm
  EndCWCID


Delay 2000

*** #2

ClearLCD
WriteLcd1 FALSE CIDCW #2
WriteLcd2 CAS = 2050Hz,2820Hz

** Set CAS Levels and Frequencies

Tone1Level 10
Tone2Level 15
TONE1FREQ 2050
TONE2FREQ 2820

** Begin Sequence
```

```
  SendSAS 300
  Dualtone 80
  DtmfAck D
  DELAY 40
  CARRIER ON
  Delay 60

  StartCWCID
    DateTime  04151405
    ICLID     00000000000
    NAME      2050Hz<20>2820Hz
  EndCWCID

Delay 2000



ClearLCD                    * Clears the LCD
WriteLCD1 TEST COMPLETE     * Displays TEST COMPLETE on the LCD (Line 1)
LEDOFF 3                    * Turns the LED on the TEST 3 button off
LINECURRENT 10              * Sets the Line Current to 10 mA


** End of script
```

MODE 2 TEST 4

```
* TITLE: Dial Pulse (PASS/FAIL)                    DATE: 7 July 1998
* This script performs pulse measurements and increments the test counters
* on the 3500 based on the results.  If a pulse is out of range, the test
* stops

ClearLCD
WriteCounter1 0
WriteCounter2 0
LEDBlink 4
WriteLCD1 PLEASE GO OFF-HOOK
WriteLCD2 AND DIAL 10 DIGITS
WaitforOffHook
DisplayPassFail
PulseMakeRange 35 45
PulseBreakRange 55 65
PulsePPSRange 9 11
MeasurePulse 10                    * Measure 10 dial-pulse digits
LEDOFF 4
IF FAIL
BEEP
ENDIF
```

MODE 2 TEST 5

```
* TITLE: DTMF Digit Test (PASS/FAIL) Requires DSP/104 Card          DATE: 7 July 1998
* This script examples shows how to compare the levels and frequencies
* of DTMF digits to some nominal values.  The script can be expanded to
* cover all digits for factory testing of telephones.  This test requires
* the presence of a DSP/104 card for DTMF digit analysis.

ClearLCD
LEDBlink 5
WriteCounter1 0
WriteCounter2 0
WriteLCD1 DTMF DIGIT TEST
WriteLCD2 PLEASE GO OFF-HOOK
WaitforOffHook
WriteLCD2 AND DIAL '1' 3 TIMES
DisplayPassFail
DtmfLowLevelRange -11 -1
DtmfHighLevelRange -11 -1
DtmfLowFreqRange  690 710          * Limits for DTMF 1
DtmfHighFreqRange 1210 1230        * Limits for DTMF 1
DtmfLowLevelRange -11 -1
DtmfHighLevelRange -11 -1
DtmfLowFreqRange  690 710          * Limits for DTMF 1
DtmfHighFreqRange 1210 1230        * Limits for DTMF 1

MeasureDTMF 3                      * measure DTMF parameters for three '1' digits
LEDOFF 5
IF PASS                            * If the above DTMF limits are met, the following
                                   * commands will run until the ENDIF
Display DTMF Measurement Passed. Press any key to continue
ENDIF
IF FAIL
BEEP
ENDIF
```

MODE 2 TEST 6

```
* TITLE: BT Caller ID Simulation                    DATE: 7 July 1998
** This script simulates the Calling Line Identification (CLI) signal
** defined in BT's SIN 227 specification for the United Kingdom.

**  Initialization

MODEM V23                          * Select V23 FSK Modem
LEVEL 20                           * FSK level is -20 dBm
SNR 30                             * FSK Signal-to-Noise Ratio is 30 dB
Tone1freq 2130                     * Alert Tone frequency selection (2130Hz+2750Hz)
Tone2freq 2750
Tone1Level 22                      * Alert Tone amplitude selection (-22 dBm per tone)
Tone2Level 22

LEDBlink 6
WriteLCD1 BT Caller ID Test
WriteLCD2 Call From 0120282469

** Start of call sequence

POLARITY REVERSE                   * Reverse the line polarity
DELAY 150                          * Wait 150 mS (should be >=100mS)
Dualtone 100                       * Alert signal ON (should be between 88 and 110 mS)
DELAY 60                           * Delay 60 mS (CPE must present DC wetting pulse
here)

STARTCLI                           * Start of CLI packet (Message Type 80Hex) message
                                   * and parameter definition

    DATETIME 11071530              *Date and time: Nov 7, 3:30pm
    CALLING 0120282469             *Calling number: 0120282469
ENDCLI                             * Calculate checksum and transmit FSK data

DELAY 250                          * Wait 250 mS after sending data
POLARITY NORMAL                    * Restore normal polarity prior to start of ringing
RING 400                           * Ring: 400mS ON, 200mS OFF, 400mS ON
DELAY 200
RING 400
Delay 4000
WriteLCD1 END OF TEST
WriteLCD2
Delay 1000
LEDOFF 5
WriteLCD1
** End of script
```

MODE 2 TEST 8

```
* TITLE: General Burn-in Test                    DATE: 7 July 1998
* This script is used for burn-in of the 3500.  Commands are included
* to exercise various hardware devices on the board.


ClearLcd
WriteLcd1      BURN IN
Delay 1000

loop 32200

ClearLcd
WriteLcd1     LED TEST
Delay 500
WriteLcd2 ON ON ON ON ON ON
LedOn 1
LedOn 2
LedOn 3
LedOn 4
LedOn 5
LedOn 6
LedOn 7
LedOn 8
LedOn 9
LedOn 10
LedOn 11
LedOn 12
LedOn 13
LedOn 14
Delay 500

WriteLcd2  OFF OFF OFF OFF
Delay 1000
LedOff 1
LedOff 2
LedOff 3
LedOff 4
LedOff 5
LedOff 6
LedOff 7
LedOff 8
LedOff 9
LedOff 10
LedOff 11
```

```
LedOff 12
LedOff 13
LedOff 14
Delay 500

ClearLcd

WriteLcd1   COUNTER TEST
Delay 250
WriteLcd2  ZERO ZERO ZERO
delay 250
WriteCounter1 0000
delay 250
WriteCounter2 0000
Delay 250
WriteLcd2  CLEAR CLEAR
delay 250
WriteCounter1
delay 250
WriteCounter2
Delay 500

ClearLcd
WriteLcd1    5 SEC. RING TEST
Delay 1000
RINGLEVEL 80
RINGFREQ 20

RING 5000
Delay 1000
polarity reverse
Delay 1000
Lineloop long
Delay 3000

WriteLcd1 WRITE TO COUNTERS
delay 500
WriteCounter1 1234
delay 250
WriteCounter2 5678
delay 1000
WriteLcd2  CLEAR COUNTERS
delay 500
WriteCounter1
delay 250
WriteCounter2
delay 250
WriteLcd2
```

```
Ringlevel 44
RING 500
Delay 1000
WriteLCD1    8 SEC RING
WriteLCD2
RING 8000
Delay 4000
ClearLcd
WriteLcd1  CALLER ID TESTS
Delay 1000
polarity normal

LEVEL 20
snr 40
RING 500
SINGLE 0000000000
Delay 1000

RING 500
SINGLE 1111111111
Delay 1000

RING 500
SINGLE 2222222222
Delay 1000

RING 500
SINGLE 3333333333
Delay 1000

WriteLcd2 WRITE TO COUNTERS
delay 500
WriteCounter1 1234
delay 250
WriteCounter2 5678
delay 1000
WriteLcd2  CLEAR COUNTERS
delay 500
WriteCounter1
delay 250
WriteCounter2
delay 1000
WriteLcd2 WRITE TO COUNTERS
delay 500
WriteCounter1 1234
delay 250
WriteCounter2 5678
```

```
delay 500
WriteLcd2

RING 500
SINGLE 4444444444
Delay 1000

RING 500
SINGLE 5555555555
Delay 1000

RING 500
SINGLE 6666666666
Delay 1000

RING 500
SINGLE 7777777777
Delay 1000

RING 500
SINGLE 8888888888
Delay 1000
Polarity Reverse

RING 500
SINGLE 9999999999
delay 1000
lineloop medium

WriteLcd1  CLEAR COUNTERS
delay 500
WriteCounter1
delay 250
WriteCounter2
delay 500
WriteLcd1   80mA / 20sec
Hook OFF
LineCurrent 80
Delay 10000
Hook ON
WriteLcd1    End of Cycle
endloop

LEDOFF 8
** End of Script
```

MODE 3 TEST 1

```
* TITLE: Visual Message Waiting Test                    DATE: 7 July 1998
* This script performs a simple single message data format visual message
* waiting test.  The script activates and deactivates a message waiting
* indicator two times (2 loops).


** Initialization

CLEARLCD                        * Clears the LCD
WriteLcd1    VISUAL MESSAGE     * Displays the test title on the LCD (Line 1)
WriteLcd2     WAITING TEST      * Displays the test title on the LCD (Line 2)
LedBlink 1                      * Causes the LED on the TEST 1 button to blink

Level 20                        * Sets the FSK Signal Level to -20 dBm
SNR 30                          * Sets the Signal-to-Noise ratio to 30 dB
Polarity Normal                 * Sets the signal polarity to normal

Delay 2000                       Delays for 2 seconds


Loop 2                          * Repeats commands between this line and ENDLOOP

ClearLcd                        * Clears the LCD
WriteLcd1   ACTIVATE MESSAGE    * Displays ACTIVATE MESSAGE on the LCD (Line 1)
WriteLcd2     WAITING LAMP      * Displays WAITING LAMP on the LCD (Line 2)


  RING 500                      * Rings for 500 mS
  Delay 500                 * Delay for 500 mS
  Msg6  Activate                * Activates Single Message Data Format Visual
                                * Message Waiting Indicator

Delay 4000                      * Delay for 4 seconds

ClearLcd
WriteLcd1  DEACTIVATE MESSAGE
WriteLcd2     WAITING LAMP
  RING 500
  Delay 500
  Msg6  DeActivate              * Deactivates Single Message Data Format Visual
                                * Message Waiting Indicator
```

```
Delay 4000


EndLoop

ClearLcd                        * Clears the LCD
WriteLcd1 TEST COMPLETE         * Displays TEST COMPLETE on the LCD (Line 1)
LEDOFF 1                        * Turns the LED on the TEST 1 button off
LINECURRENT 10                  * Sets the Line Current to 10 mA


** End of script
```

MODE 3 TEST 2

```
* TITLE: FAX Send and Receive Test                    DATE: 7 July 1998
* This script includes both a send and receive FAX test.  First, a
* FAX is sent from the unit under test (e.g., a fax machine) to the
* 3500.  Then the same document is faxed from the 3500 to the unit
* under test.  Note that any document may be faxed to the 3500.  The
* 3500 receives the fax and stores it as a file named TESTFAX.F01 on
* the C: flash drive.


** Initialization

ClearLcd                        * Clears the LCD
LedBlink 2                      * Causes the LED on the TEST 2 button to blink
WriteLcd1     FAX SEND &        * Displays the test title on the LCD (Line 1)
WriteLcd2     RECEIVE TEST      * Displays the test title on the LCD (Line 2)

Noise off                       * Turns noise off
ringlevel 70                    * Sets the Ring Level to 70 VACrms
ringfreq 25                     * Sets the Ring Frequency to 25 Hz
LineCurrent 30                  * Sets the Line Current to 30 mA


** Transmit From Unit Under Test

Delay 3000
ClearLcd
WriteLcd1     TRANSMIT TEST
DELAY 2000
ClearLcd
WriteLcd1     LOAD DOCUMENT
DELAY 2000
ClearLcd
WriteLcd1     DIAL NUMBER
WriteLcd2     FOLLOWED BY #
DELAY 2000
CLearLcd
WriteLcd1     PRESS START



WaitForCall                     * Waits for the unit under test to go off-hook
                                * and dial a number ending with the # key.
Delay 100                       * Delay for 100 mS
```

```
ClearLcd
WriteLcd1   RECEIVING FAX
ReceiveFax TestFax              * ReceiveFax provides all the handshaking
                                * necessary to receive a test fax from
                                * the unit under test.  The received
                                * FAX is stored as a file named "TestFax"
                                * on the 3500.
ClearLcd
WriteLcd1    TRANSMISSION
WriteLcd2      COMPLETE
Delay 8000


*******  FaxToVGA TestFax       * Displays the contents of "TestFax"
                                * Take comments before “FaxToVGA” to
                                * enable VGA screen display of received Fax

** Receive at Unit Under Test

LINECURRENT 10
ClearLcd
WriteLcd1   RECEIVE FAX TEST


MakeCall                        * Rings the unit under test using ring levels and freq.
                                * defined in the initialization section, until the fax
                                * machine answers.  A 2 second ON/4 second OFF
                                * ringback cadence is used.
LINECURRENT 30
DELAY 100
ClearLcd
WriteLcd1    SENDING FAX
SendFax TestFax                 * SendFax provides all the handshaking necessary
                                * to send a test fax to the external fax machine.
                                * The 3500 sends the file "TestFax".


ClearLcd
WriteLcd1 TEST COMPLETE
LEDOff 2
LINECURRENT 10

** End of script
```

MODE 3 TEST 3

```
** TITLE: Japan Caller ID                                   DATE: 7 July 1998
** This script simulates the Calling Line Identification (CLI) signal
** defined in NTT's Trial Specifications for Japan. Critical timing
** parameters and signal levels are controllable.

**  Initialization

ClearLcd                          * Clears the LCD
WriteLcd1   JAPAN CALLER ID       * Writes the test title to the LCD (Line 1)
LedBlink 3                        * Causes the LED on the TEST 3 button to blink

MODEM V23                         * Selects V23 FSK Modem Type
LEVEL 20                          * Sets the FSK Signal Level to -20 dBm
SNR 30                            * Sets the Signal-to-Noise Ratio to 30 dB
RingLevel 55                      * Sets the Ring Level to 55 VACrms
RingFreq 20                       * Sets the Ring Frequency to 20 Hz

** Call 1

Delay 2000
ClearLcd                          * Clears the LCD
WriteLcd1    BEGIN SEQUENCE       * Displays CALL 1 on the LCD (Line 1)


** Set up Line

Polarity Reverse                  * Reverses the line polarity
Delay 150                         * Delay for 150 mS (should be >=100mS)


** Begin Caller ID Sequence

Ring 500                          * Ring for 500 mS - CPE Activation Ringing (CAR)
Delay 500                         * Delay for 500 mS
Ring 500                          * Ring for 500 mS
Delay 500                         * Delay for 500 mS
Ring 500                          * Ring for 500 mS
Delay 500                         * Delay for 500 mS
Ring 500                          * Ring for 500 mS
Delay 500                         * Delay for 500 mS
Ring 500                          * Ring for 500 mS
Delay 500                         * Delay for 500 mS
```

```
Ring 500                        * Ring for 500 mS
WaitforOffHook 1000             * Wait for 1000 mS - Should be already off hook

** Data Transmission

ClearLcd
WriteLcd1    TRANSMIT DATA


Delay 200                       * Delay for 200 mS before commencing data
transmission
Carrier ON                      * Turn carrier ON
Delay 50                        * Delay for 50 mS so that carrier is ON for that period
PARITY EVEN                     * Set parity
SEND <10><01><07><10><02><40><0C><02><0A>0335092111<10><03>
                                * Send Caller ID data
PARITY NONE                     * Set parity
SEND <8A><D3>                   * Send 16-bit Checksum (CRC-CCITT) from header
                                * <07> to ETX <03>
Delay 20                        * Delay for 20 mS
Carrier OFF                 * Drop carrier
WaitforOnhook 1000              * WaitforOnhook
Delay 400                       * Delay for 400 mS

** Begin Ring Sequence

ClearLcd
WriteLcd1     BEGIN RING

Ring 1000                       * Generate first ring
Delay 3000
ClearLcd
Ring 1000
Delay 3000

ClearLcd                        * Clears the LCD
WriteLcd1 TEST COMPLETE         * Displays TEST COMPLETE on the LCD (Line 1)
LedOff 3                        * Turns the LED on the TEST 3 button off


** End of script
```

MODE 3 TEST 4

```
* TITLE: Answering Machine-DTMF Detection and Rejection          DATE: 7 July 1998
* This script generates a combination of good and bad DTMF tones for
* detection by an answering machine.

**  Initialization
LineCurrent 40
RingLevel 70
ClearLCD
WriteLCD1 ANSWERING MACHINE
WriteLCD2 DTMF RECEIVER TEST
LEDBlink 4
Delay 1500
WriteLCD1 RING
WriteLCD2
RING 400                              * Ring: 400mS ON, 200mS OFF, 400mS ON
DELAY 200
RING 400
WriteLCD1 WAITING FOR OFF HOOK
WaitforOffHook
WriteLCD2
Delay 1000
Tone1Freq 920
Tone2Freq 1209
Tone1Level 5
Tone2Level 5
SNR 48
WriteLCD1 FALSE DTMF * (FREQ)
WriteLCD2 920/1209HZ -5DBM
DualTone 1000
Delay 1000
WriteLCD1 FALSE DTMF * (DUR)
WriteLCD2 -5DBM / 30mS
Tone1Freq 941
Tone2Freq 1209
DualTone 30
Delay 1000
Tone1level 30
Tone2Level 30
WriteLCD1 LOW LEVEL DTMF *
WriteLCD2 -30DBM/100mS
DualTone 100
Delay 1000
WriteLCD1 DTMF * W/17SNR NOISE
WriteLCD2 -20DBM/100mS
```

```
Tone1Level 20
Tone2Level 20
SNR 17
Delay 1000
DualTone 100
Delay 1000

SNR 40
WriteLCD1 LOUD DTMF
WriteLCD2 0DBM/50mS
Tone1Level 0
Tone2Level 0
DualTone 50
Delay 1000
ClearLCD
WriteLCD1 END OF TEST
LEDOFF 4
** End of script
```

MODE3 TEST 5

```
* TITLE: Answering Machine-Dial Tone Detection          DATE: 7 July 1998
* This script generates a steady dial tone following an incoming call.
* It simulates the case when a caller hangs up on an answering machine.
* Many smart answering machines detect such a tone and do not record it.

**  Initialization
LineCurrent 40
RingLevel 70
ClearLCD
WriteLCD1 ANSWERING MACHINE
WriteLCD2 DIAL TONE DETECTION
LEDBlink 5
Delay 1500
ClearLCD
WriteLCD1 RING
RING 400                              * Ring: 400mS ON, 200mS OFF, 400mS ON
DELAY 200
RING 400
WriteLCD1 WAITING FOR OFF HOOK
WriteLCD2
WaitforOffHook
WriteLCD1 7 SEC. DIAL TONE
WriteLCD2 350/440HZ -10DBM
Tone1Level 10
Tone2Level 10
Tone1Freq 350
Tone2Freq 440
DualTone 7000
WriteLCD1 END OF TEST
WriteLCD2
LEDOFF 5
** End of script
```

MODE3 TEST 6

```
* TITLE: UK Caller ID and Answering Machine Demo                DATE: 7 July 1998
* This script provides an answering machine demo equipped with BT-compatible
* Calling Line Identification.

**  Initialization
LineCurrent 40
RingLevel 70
ClearLCD
WriteLCD1 ANSWERING MACHINE
WriteLCD2 BT CALLER ID TEST
LEDBlink 6
Delay 1000
MODEM V23                       * Select V23 FSK Modem
LEVEL 20                        * FSK level is -20 dBm
SNR 30                          * FSK Signal-to-Noise Ratio is 30 dB
Tone1freq 2130                  * Alert Tone frequency selection (2130Hz+2750Hz)
Tone2freq 2750
Tone1Level 22                   * Alert Tone amplitude selection (-22 dBm per tone)
Tone2Level 22


** Start of call sequence
WriteLCD1 GENERATING CALLER ID
WriteLCD2
POLARITY REVERSE                * Reverse the line polarity
DELAY 150                       * Wait 150 mS (should be >=100mS)
WriteLCD2 POLARITY REVERSED
Dualtone 100                    * Alert signal ON (should be between 88 and 110 mS)
DELAY 60                        * Delay 60 mS (CPE must present DC wetting pulse
here)
STARTCLI                        * Start of CLI packet (Message Type 80Hex) message
                                * and parameter definition

    DATETIME 11071530           *Date and time: Nov 7, 3:30pm
    CALLING 01202824698         *Calling number: 01202824698
    CALLED 01202555789          *Called number: 01202555789
    NAME JOE_DOE                *Calling name: JOE_DOE
ENDCLI                          * Calculate checksum and transmit FSK data
DELAY 250                       * Wait 250 mS after sending data
POLARITY NORMAL                 * Restore normal polarity prior to start of ringing
WriteLCD2 POLARITY NORMAL
Delay 200
WriteLCD2 RING
RING 400                        * Ring: 400mS ON, 200mS OFF, 400mS ON
```

```
DELAY 200
RING 400
WriteLCD1 WAITING FOR OFF HOOK
WriteLCD2
WaitforOffHook

WriteLCD1 LISTENING TO
WriteLCD2 OGM MESSAGE 5 SEC
Delay 5000
WriteLCD1 PLAYING MESSAGE TO
WriteLCD2 ANS. MACHINE 20 SEC
Playwave greeting.msg
Delay 500
WriteLCD1 SIMULATING 100mS
WriteLCD2 LINE BREAK
Delay 1000
LINEBREAK 100
Delay 100
ClearLCD
WriteLCD1 WAITING FOR ON HOOK
WaitforOnHook
WriteLCD1 ON HOOK DETECTED
WriteLCD2
Delay 1000
WriteLCD1 END OF TEST
LEDOFF 6
** End of script
```

DOS MODE TEST 1

* This script clears the 2 Pass/Fail counters on the front panel.

```
WriteCounter1
WriteCounter2

** END SCRIPT
```

DOS MODE TEST 2

* This script displays the version numbers of the front panel firmware and software.

```
DisplayVersion

** END SCRIPT
```

DOS MODE TEST 3

This script copies Test Files from Directories on the Floppy (B:) to Corresponding Directories on the C: Flash Drive

```
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B    COPYING FILES
WAIT .5 SECOND
ECHO >COM2 +C     PLEASE WAIT
COPY B:\MODE1\*.* C:\MODE1\*.*
COPY B:\MODE2\*.* C:\MODE2\*.*
COPY B:\MODE3\*.* C:\MODE3\*.*
COPY B:\DOS\*.* C:\DOS\*.*
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B    FILE TRANSFER
WAIT .5 SECOND
ECHO >COM2 +C     COMPLETE
: END
```

DOS MODE TEST 4

This Script Copies test files from directories on a floppy disk to the functional directories on the system according to assignments made in a file called asgndir.bat.

```
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B    COPYING FILES
WAIT .5 SECOND
ECHO >COM2 +C     PLEASE WAIT
CALL B:ASGNDIR.BAT
COPY B:\%MODE1%\*.* C:\MODE1
COPY B:\%MODE2%\*.* C:\MODE2
COPY B:\%MODE3%\*.* C:\MODE3
COPY B:\%DOS%\*.* C:\DOS
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B    FILE TRANSFER
WAIT .5 SECOND
ECHO >COM2 +C     COMPLETE
: END
```

DOS MODE TEST 5

This Script Launches support and maintenance programs (e.g., software upgrades) from a floppy disk.

```
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B    COPYING FILES
WAIT .5 SECOND
ECHO >COM2 +C     PLEASE WAIT
B:
update -d -o C:\
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B    SYSTEM UPDATE
WAIT .5 SECOND
ECHO >COM2 +C     COMPLETE
C:
FP
: END
```

DOS MODE TEST 6

This Script Launches support and maintenance programs (e.g., software upgrades) from a floppy disk.

```
B:
INSTALL
```

DOS MODE TEST 8

This Script Launches support and maintenance programs (e.g., software upgrades) from a floppy disk.

```
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B  ADMIN IN PROGRESS
WAIT .5 SECOND
ECHO >COM2 +C     PLEASE WAIT
CALL B:ADMIN.BAT
ECHO >COM2 +A
WAIT .5 SECOND
ECHO >COM2 +B   ADMIN PROCEDURE
WAIT .5 SECOND
ECHO >COM2 +C     COMPLETE
```

MODEL 3500
EXAMPLE SCRIPTS FOR 3500MENU OR FP
USE

1000_CAS.SCR

```
** This script generates 1000 CAS tones in a loop and tracks DTMF D ACK
** response.

* Initialization
Tone1freq 2130                  * CAS Tone parameters
Tone2freq 2750
Tone1Level 25
Tone2Level 20

* Start of call sequence
Loop 1000
  Dualtone 80                   * Generate a CAS Tone
  DtmfAck D                     * Look for ACK D; timeout in 200 mS if not detected
  Delay 1200                    * Loop delay
Endloop

** End of script
```

50_CALLS.SCR

```
* This script generates fifty calls with Multiple Message Caller ID.
* The names are consecutive, allowing a quick check for missed calls
* on a Caller ID-equipped telephone or display unit.  When operating
* properly, such a unit will display 50 calls after the end of
* this script.

** Initialization

MODEM BELL202                   * Select Bell 202 FSK Modem
LEVEL 35                        * FSK Signal Level is -35dBm (approx. -29dBm if the
                                * load is high impedance)
SNR 20                          * Signal-to-Noise Ratio set at 20dB

** Start of call simulation

RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME ONE                        * Display ONE in the Name Field
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWO
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THREE
ENDMULTIPLE
DELAY 1000
*
```

```
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FOUR

ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FIVE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME SIX
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME SEVEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME EIGHT
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
```

```
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME NINE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212

NAME TEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME ELEVEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWELVE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTEEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
```

```
ICLID 5125551212
NAME FOURTEEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FIFTEEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245

ICLID 5125551212
NAME SIXTEEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME SEVENTEEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME EIGHTEEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME NINETEEN
```

```
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_ONE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE

DATETIME 10171245
ICLID 5125551212
NAME TWENTY_TWO
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_THREE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_FOUR
ENDMULTIPLE
DELAY 1000
```

```
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_FIVE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_SIX
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_SEVEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500

MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_EIGHT
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME TWENTY_NINE
ENDMULTIPLE
DELAY 1000
*
RING 1000
```

```
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME CALL_THIRTY
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_ONE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_TWO
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_THREE
ENDMULTIPLE
DELAY 1000
*
RING 1000

DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_FOUR
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
```

```
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_FIVE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_SIX
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_SEVEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_EIGHT
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME THIRTY_NINE
ENDMULTIPLE
DELAY 1000
*

RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
```

```
NAME CALL_FORTY
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_ONE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_TWO
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_THREE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_FOUR
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_FIVE
ENDMULTIPLE
DELAY 1000
```

```
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_SIX
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_SEVEN
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_EIGHT
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FORTY_NINE
ENDMULTIPLE
DELAY 1000
*
RING 1000
DELAY 500
MULTIPLE
DATETIME 10171245
ICLID 5125551212
NAME FIFTY
ENDMULTIPLE
DELAY 1000

** End of script
```

ARGENTIN.SCR

```
** This script simulates the On-hook Type I Caller ID for Telecom de          **

** Argentina based on the "Especificacion de Requisitos AR.ER.c2.002 Ed.1" **
**                                                                            **
********************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.        **
** Updated on 7/22/1999.                                                      **
********************************************************************************

** Initialization - Use default CO Line on-hook DC voltage setting

MODEM V23                       * Selects V23 Modem Type
Level -20                       * FSK Transmit Level is -20 dBm. Since we are transmitting
                                * into a high-impedance load, the actual signal level will be
                                * about 4-6 dB higher.
SNR 35                          * FSK Signal-to-noise ratio set at 35 dB
RingLevel 55                    * Ring level must be 30 - 90 VAC RMS
RingFreq 25                     * Ring frequency must be 23 - 28 Hz

** Start of call sequence

Ring 500                        * Alerting Signal is a 500 mS ring (must be 250 - 1200 mS)
Delay 550                       * Pause prior to the start of FSK transmission (> 500 mS)

SEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
CARRIER ON
DELAY 150                       * Provides 180 bits (150 mS) mark signal (155<mark<205 bits)
SEND <80><14><01><08>02201018<02><08>42457645#    * Date/Time, and ICLID data
DELAY 10
CARRIER OFF
Delay 250                       * Pause following the end of tranmission. Must be > 200 mS.

Ring 1000                       * Second ring
Delay 5000                      * Silence between rings
Ring 1000                       * Third ring

** End of script
```

AUDIO.SCR

```
** This script example shows how to record and play an audio file using the
** Caller ID Telephone Production Tester, Model 3500.


Display Record a message using a telephone handset.

LineCurrent 30
WaitforOffHook                  * Waits for off-hook
Delay 500
RecordWave TESTREC 10           * Records a 10 second message and saves it as a file
                                * named 'TESTREC'.


Display Listen to the message played through a telephone handset or speakers.

Delay 5000

PlayWave testrec                * Plays the sound recording named 'TESTREC'.


** End of Script
```

BIT_STUF.SCR

This is an example of using the FSKDELAY command to stuff MARK bits between each character.

```
Initialization MODEM Bell202      * Select Bell 202 FSK Modem
Level 20                          * Set FSK signal level to -20dBm
SNR 30                            * Set the Signal-to-Noise Ratio to 30dB
FSKDELAY 15                       * 15ms of mark signal between each character


** Start of call sequence

RING                              * 2 sec ring signal
DELAY 500                         * 0.5 sec delay
SINGLE 5125551234                 * generate a single message Caller ID packet


** End of script
```

BRAZIL.SCR

```
*********************************************************************************************
** This script allows the user to simulate two incoming calls with on-hook          **
** Caller ID based on the unofficial Brazilian format.  The first call uses         **
** DTMF signaling (similar to the one used in Finland) for Caller ID, while         **
** the second call uses Multi-Frequency (MF) tones (usually reserved for            **
** central office trunk signaling).                                                 **
**                                                                                  **
*********************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.              **
** Updated on 7/22/1999.                                                            **
*********************************************************************************************
** Initialization - Use default CO Line on-hook DC voltage setting

RingLevel 55                    * Set ring voltage at 55Vac RMS
Ringfreq 25                     * Set ring frequency at 25Hz
Level -20                       * Set DTMF at -20 dBm (ref 600 ohms). Since we are
                                * transmitting into a high impedance load, the actual
                                * signal level will be approximately 4-6dB higher)

* Start of call sequence #1 (Call from 456 7891) using DTMF signaling

Polarity Reverse                * Alerting Signal prior to ICLID transmission
Delay 300                       * Delay before the start of transmission
SendDTMF A14567891C 70 70       * Caller ID string format is AcnnnnnnnC
                                * DTMF "A" and "C" denote the start and end
                                * of the Caller ID transmission, respectively.
                                * 'c' is the call type ("1" indicates a regular
                                * unrestricted subscriber number).
                                * nnnnnnnn is the telephone number.
                                * DTMF duration 70 mS, interdigit dur. 70 mS.

* End of Caller ID data transmission

Delay 300
Polarity Normal                 * Restore telephone line polarity to normal
Ring 1000                       * Programmable ring duration
Delay 4000
Hook Off                        * Call is answered
Delay 5000                      * Parties talk for 5 seconds
Hook on                         * Line is idle
Delay 4000


** Start of call sequence #2 (345 2297) Using MF signaling
** Caller ID String Format is cnnnnnnnF, where 'c' is the Call Type (1-9),
```

** 'nnnnnnn' is the calling number, and MF "F" is the string terminator.

```
Polarity Reverse                * Alerting Signal
Delay 350

Tone1Freq 1380                  * Set frequency and amplitude for MF
Tone2Freq 1500                  * Call Type is 1, represented by MF "1"
Tone1Level -15                  * Tone 1 amplitude is -15 dBm, ref. 600 ohms
                                * It will be actually about 4 - 6dB higher, if
                                * terminal presents a high impedance
Tone2Level -13          * Tone 2 is -13dBm, resulting in a 2dB twist
                                * Those signal levels will be used as a default
Dualtone 100                    * MF tone duration
Delay 100                       * Interdigit delay

Tone1Freq 1500                  * MF "3"
Tone2Freq 1620
Dualtone 100                    * Generate MF "3"
Delay 100                       * Interdigit delay

Tone1Freq 1380                  * MF "4"
Tone2Freq 1740
Dualtone 100
Delay 100

Tone1Freq 1500                  * MF "5"
Tone2Freq 1740
Dualtone 100
Delay 100

Tone1Freq 1380                  * MF "2"
Tone2Freq 1620
Dualtone 100
Delay 100

Tone1Freq 1380                  * MF "2"
Tone2Freq 1620
Dualtone 100
Delay 100

Tone1Freq 1620                  * MF "9"
Tone2Freq 1860
Dualtone 100
Delay 100

Tone1Freq 1380                  * MF "7"
Tone2Freq 1860
Dualtone 100
```

```
Delay 100

Tone1Freq 1860                  * MF "F" Caller ID string terminator
Tone2Freq 1980
Dualtone 100

                                * End of Caller ID data transmission
Delay 300
Polarity Normal                 * Restore telephone line polarity to normal
Delay 4000

** End of script
```

CID_BRK.SCR

```
* This script allows the user to insert a 10 mS carrier in the middle of
* the Caller ID data transmission.

MODEM Bell202                    * Select FSK Modem Type
Level 20                         * Sets FSK signal level to -20dBm
SNR 30                           * Sets the Signal-to-Noise Ratio to 30dB
Polarity Normal                  * Sets the telephone line polarity to normal

RING                             * 2 sec ring signal
DELAY 500                        * 0.5 sec delay
SEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU    * Sends the channel seizure signal
CARRIER ON                       * Turns the carrier signal on during the silence period
DELAY 150                        * 150 mS of carrier signal
SEND <04><0F>0803031             * Sends Date and Time data
DELAY 10                         * Interrupt data packet for 10 mS; carrier stays ON
SEND 95551234<EC>                * Sends remainder of Caller ID data (ICLID Number)
DELAY 10                         * Keeps Carrier ON for 10 mS at the end.
CARRIER OFF                      * Turns Carrier OFF

*End of script
```

CW_CID.SCR

```
** This script allows the user to simulate a Type-II Caller ID on
** Call Waiting message.  Critical timing parameters and signal levels
** are programmable.

** Initialization

  MODEM BELL202                 * Selects Bell 202 Modem Type
  Level 20                      * Sets FSK Signal Level to -20 dBm
  SNR 30                        * Sets Signal to Noise ratio to 30 dB
  Tone1freq 2130                * Defines CAS tone frequency and amplitude
  Tone2freq 2750
  Tone1Level 15
  Tone2Level 18                 * Sets Programmable Line Current to 30 mA
  RingLevel 55                  * Sets Ring Level and Frequency
  RingFreq 20
  Polarity Normal               * Sets the Line Polarity to Normal

** Start of call sequence

  RING
  DELAY 500
  Single 2135558763             * Sends a Single Message Type I (on-hook) Caller ID packet

  WaitForOffHook                * Waits for the handset to be lifted
  Delay 3000
  SendSAS 300                   * Generates call waiting (440 Hz) SAS alerting signal for 300 mS
  Dualtone 80                   * Generates CAS tone (2130Hz+2750Hz) for 80 mS
  DtmfAck D                     * Waits for CPE to send ACK signal (DTMF D) -- function returns
                                * approx. 40 mS after the end of the DTMF tone is detected
  DELAY 40                      * Delay for an additional 40 mS (80 mS. total from end of DTMF D)
  CARRIER ON                    * Turns FSK modem carrier ON
  Delay 60                      * Delay for 60 mS

  StartCWCID                    * Defines the data content of the Caller ID message
    DateTime  04151345
    ICLID     7035558753
    NAME      JONES_THOMAS
  EndCWCID

** End of script
```

DTMFMEAS.SCR

```
* This script illustrates the use of the DSP/104 card for DTMF digit
* analysis.

    Linecurrent 20          * Line current set at 20 mA
    WaitforOffhook          * go off-hook
    MeasureDTMF             * measure and display DTMF parameters
    Beep                    * script ends when user presses ESC or goes
                            * on-hook

** End of script
```

DTMFTEST.SCR

```
* cover all digits for factory testing of telephones.  This test requires
* the presence of a DSP/104 card for DTMF digit analysis.

      ClearLCD
      LEDBlink 5
      WriteCounter1 0
      WriteCounter2 0
      WriteLCD1 DTMF DIGIT TEST
      WriteLCD2 PLEASE GO OFF-HOOK
      WaitforOffHook
      WriteLCD2 AND DIAL '1' 3 TIMES
      DisplayPassFail
      DtmfLowLevelRange -11 -1
      DtmfHighLevelRange -11 -1
      DtmfLowFreqRange  690 710        * Limits for DTMF 1
      DtmfHighFreqRange 1210 1230      * Limits for DTMF 1
      DtmfLowLevelRange -11 -1
      DtmfHighLevelRange -11 -1
      DtmfLowFreqRange  690 710        * Limits for DTMF 1
      DtmfHighFreqRange 1210 1230      * Limits for DTMF 1

      MeasureDTMF 3                    * measure DTMF parameters for three '1' digits
      IF PASS                          * If the above DTMF limits are met, the
                                       * following commands will run until the ENDIF
        Display DTMF Measurement Passed. Press any key to continue
      ENDIF
      IF FAIL
        BEEP
      ENDIF
```

EXAMPLE1.SCR

```
* This sample script provides examples of Single Message and Multiple Message
* Type I Caller ID with Long Distance, Private, and Out of Area Qualifiers and
* Single Message and Multiple Message Visual Message Waiting Indication (VMWI).

** Initialization

Level 20                        * Sets the FSK signal level to -20 dBm
SNR 30                          * Sets the Signal to Noise ratio to 30 dB
Polarity Normal                 * Sets the Line Polarity to Normal

** Start of call sequence

LOOP 3                          * Repeats commands between this line and the ENDLOOP
                                * command 3 times
  RING                          * Ring for 2 seconds
  Delay 500                     * Delay for 500 mS before sending ICLID data. Note that
                                * the delay maximum limit is 65535 milliseconds.
  Single 5145551234             * Sends Single Message ICLID packet: channel seizure
                                * signal, ICLID header, length, date, time, and checksum
                                * will automatically be generated.
  Delay 3200                    * Delay for 3.2 seconds. Note that the total silence
                                * since the 1st ring is about 4 seconds including the 500
                                * mS delay and the time needed to send the ICLID data.
  RING 2000                     * Ring for 2 seconds (2nd ring)
  Delay 1000                    * Delay for 1 second

ENDLOOP                         * Repeat commands between LOOP and ENDLOOP commands.

Delay 5000                      * 5 second delay
RING  1500                      * Ring for 1.5 seconds
Delay 500                       * 0.5 second delay
MULTIPLE                        * Define data content for Multiple Message Caller ID packet
  DateTime    06151345          * June 15, 1:45 PM
  ICLID       6175556789        * ICLID Number
  QUALIFIER   L                 * Call Qualifier (Long Distance)
  NAME  BARNES<20>KIM           * Name (Hex 20=Space)

ENDMULTIPLE                     * Build and send Multiple Message Caller ID packet.

Delay 6000                      * 6 second delay

RING 2000                       * Ring for 2 seconds
```

```
Delay 500                          * Delay for 0.5 second

MULTIPLE                           * Define data content for Multiple Message Caller ID packet
  DateTime    04151345             * April 15, 1:45 PM
  DDN         16135551234          * Dialable Directory Number
  NAMEREASON  P                    * Reason for Name Absence (Private)

ENDMULTIPLE                        * Build and send Multiple Message Caller ID packet.

Delay 6000                         * 6 second delay

RING 2000                          * Ring for 2 seconds
Delay 500                          * Delay for 0.5 second

MULTIPLE                           * Define data content for Multiple Message Caller ID packet
  DateTime    07050901             * Jul 5, 9:01 AM
  Reason      O                    * Reason for Number Absence (Out of Area)
  NAME  SMITH<20>JOHN              * Name (Hex 20=Space)

ENDMULTIPLE                        * Build and send Multiple Message Caller ID packet.

  Delay 6000                       * 6 second delay
```

** Activate Single Message Data Format Visual Message Waiting Indicator

```
RING 500
Delay 500
Msg6  Activate                     * Sends a Single Message VMWI activation signal
Delay 6000
```

** Deactivate Single Message Data Format Visual Message Waiting Indicator

```
RING 500
Delay 500
Msg6  DeActivate                   * Sends a Single Message VMWI deactivation signal
Delay 6000
```

** Activate Multiple Message Data Format Visual Message Waiting Indicator

```
RING 500
Delay 500
MsgMul  Activate                   * Sends a Multiple Message VMWI activation signal
Delay 6000
```

** Deactivate Multiple Message Data Format Visual Message Waiting Indicator

```
RING  500
Delay 500
MsgMul  DeActivate                    * Sends a Multiple Message VMWI deactivation signal
Delay 6000

** End of script
```

EXAMPLE2.SCR

```
* This sample script provides examples of Single Message and Multiple Message
* Type I Caller ID with Long Distance, Private, and Out of Area Qualifiers.
* Four calls are looped sixteen (16 times) for a total of 64 calls.

** Initialization

Level 40                        * Sets the FSK signal level to -40 dBm
SNR 20                          * Sets the Signal to Noise ratio to 20 dB
Polarity Normal                 * Sets the Line Polarity to Normal

** Start of call sequence

Loop 16                         * Repeats commands between this line and the ENDLOOP
                                * command 16 times - for a total of 64 phone calls

** First Call

  RING                          * Ring for 2 seconds (Note that the default ring duration
                                * is 2 seconds).
  DELAY 500                     * Delay for 500 mS before sending ICLID data. Note that
                                * the delay maximum limit is 65535 milliseconds.
  Single 6125559041             * Sends Single Message ICLID packet: channel seizure
                                * signal, ICLID header, length, date, time, and checksum
                                * will automatically be generated.
  Delay 3200                    * Delay for 3.2 seconds (silence between rings). Note that the
                                * total silence since the 1st ring is about 4 seconds including
                                * the 500 mS delay and the time needed to send the ICLID data.
  RING                          * Ring for 2 seconds (2nd ring)

  Delay 3000                    * 3 second delay

** Second Call

  RING  1500                    * Ring for 1.5 seconds
  Delay 500                     * Delay for 500 mS
  Multiple                      * Define data content for Multiple Message Caller ID packet
    DateTime    06151345        * June 15, 1:45 PM
    ICLID       3128365555      * ICLID number
    DDN         13128365555     * Dialable Directory Number
    QUALIFIER   L           * Call Qualifier (Long Distance)
    NAME  SMITH<20>MIKE         * Name (Hex 20=Space)

  ENDMULTIPLE                   * Build and send Multiple Message Caller ID packet.

  Delay 8000                    * 8 second delay
```

```
** Third Call

  RING                          * Ring for 2 seconds
  Delay 500                     * Delay for 500 mS

  Multiple                      * Define data content for Multiple Message Caller ID packet
    DateTime    04151345        * April 15, 1:45 PM
    DDN         8447666         * Dialable Directory Number
    NAMEREASON  P               * Reason for Name Absence (Private)

  ENDMULTIPLE                   * Build and send Multiple Message Caller ID packet.

  Delay 3200                    * Delay for 3.2 seconds (silence between rings). Note that the
                                * total silence since the 1st ring is about 4 seconds including
                                * the 500 mS delay and the time needed to send the ICLID data.
  RING                          * Ring for 2 seconds (2nd ring)
  Delay 7000                    * 7 sec delay.

** Fourth Call

  RING                          * Ring for 2 seconds
  Delay 500                     * Delay for 500 mS
  Multiple                      * Define data content for Multiple Message Caller ID packet
    DateTime    07050901        * Jul 5, 9:01 AM
    Reason      O               * Reason for Number Absence (Out of Area)
    NAME  JONES<20>MARY         * Name (Hex 20=Space)

  ENDMULTIPLE                   * Build and send Multiple Message Caller ID packet.

  Delay 4500                    * 4.5 second delay

ENDLOOP                         * Repeats commands between LOOP and ENDLOOP commands.


** End of script
```

FAXTEST.SCR

```
* This sample script demonstrates a GIII fax test including: sending a FAX
* from the unit under test to the 3500 and receiving a FAX at the unit
* under test from the 3500.


** Initialization

Level 20                        * Sets DTMF to -20 dBm
Noise off                       * Turns Noise Off on the line
ringlevel 70                    * Sets the Ring Voltage to 70 Vrms
ringfreq 25                     * Sets the Ring Frequency to 25 Hz
LineCurrent 30                  * Sets the Line Current to 30 mA

Display Send a FAX from the unit under test to the Model 3500.

WaitForCall                     * Waits for the unit under test (i.e. FAX machine)
                                * to go off-hook and dial a test number followed by
                                * the # key.
Delay 100                       * Delay for 100 mS
ReceiveFax TestFax          * ReceiveFax provides all the handshaking
                                * necessary to receive a test fax from
                                * the unit under test.  The received FAX is stored
                                * as a file named 'TESTFAX'.

FaxToVGA TestFax            * Displays the contents of "Testfax".

Pause                           * Pauses until a key is pressed on the keyboard.

Display Receive a FAX at the unit under test from the Model 3500.

LineCurrent 10                   * Sets the Line Current to 10 mA
MakeCall                        * Rings the unit under test using ring levels and
                                * frequencies described in the initialization section,
                                * until the external unit answers.  A 2 second ON/4 second
                                * OFF ring cadence is used.
LineCurrent 30                  * Sets the Line Current to 30 mA (after the unit under
                                * test goes off-hook.
Delay 100                       * Delay for 100 mS
SendFax TestFax                 * SendFax provides all the handshaking necessary
                                * to send a test fax to the unit under test.  The 3500
                                * faxes the file named 'TESTFAX'.

LineCurrent 10                  * Sets the Line Current back to 10 mA
** End of script
```

FRANCE.SCR

```
*************************************************************************************************
** This script simulates the on-hook Caller ID for France as described in          **
** the France Telecom CNET specification DT/LAA/TCS/TRA/94-332 ed.4.               **
**                                                                                 **
*************************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.            **
** Updated on 7/22/1999.                                                          **
*************************************************************************************************

** Initialization - Use default on-hook CO voltage level

MODEM V23                       * Selects V23 Modem Type
Level -20                       * FSK Transmit Level is -20 dBm (ref. 600 ohms).  Since we
                                * are transmitting into a high impedance load, the actual
                                * signal level will be about 4-6 dB higher.
SNR 35                          * FSK signal-to-noise ratio set at 35 dB
RingLevel 55                * Set ring level to 55 VAC
RingFreq 25                     * Set ring frequency to 25 Hz

* Start of call sequence

Ring 250                        * Alerting Signal - 250 mS. Ring - must be 200-300 mS.
Delay 650                       * Delay before start of transmission - must be 500-800 mS.

MULTIPLE                        * Caller ID data content
      DATETIME 10201525
      ICLID 0296056789
ENDMULTIPLE

Delay 350                       * Delay before normal ringing - must be 200-500 mS.
Ring 1000                       * Second ring
Delay 3000                      * Silence between rings
Ring 1000                       * Third ring

** End of script
```

GERMANY.SCR

```
*************************************************************************************************
** This script simulates the on-hook Caller ID for Germany according to                **
** German Telekom regulation BAPT 223 ZV5.  It references the ETSI spec.               **
** ETS 300 659-1.                                                                      **
**                                                                                     **
*************************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.                 **
** Updated on 7/26/1999.                                                               **
*************************************************************************************************

** Initialization - Use default on-hook CO voltage level


 MODEM V23                          * Selects V23 FSK Modem
 Level -20                          * FSK Transmit Level is -20 dBm ref. 600.  Since we
                                    * are transmitting into a high impedance load, the
                                    * actual level will be approx. 4-6dB higher.
 SNR 35                             * FSK Signal-to-noise ratio set at 35 dB
 RingLevel 55
 RingFreq 25

* First Call - Calling Number with Date and Time information

Ring 600                            * Alerting ring can be between 250 and 1200 mS
Delay 600                           * Can be between 500 and 2000 mS
SEND UUUUUUUUUUUUU                  * Channel Seizure with 130 bits, range (96 - 316 bits)
CARRIER ON
DELAY 106                           * 127 bits of mark signal, range (55 - 205 bits)
SEND <80><14><01><08>02201018<02><08>42457645#  * Caller ID data (call from
                                    * 42457645 on Feb. 20 10:18AM)
Delay 10
CARRIER OFF
Delay 250                           * must be greater than or = to 200 mS
Ring 1000                           * Second ring
Delay 5000                          * Silence between ring
Ring 1000                           * Third ring

Delay 7000

* Second Call - Number Unavailable

Ring 600                            * Alerting ring can be between 250 and 1200 mS
```

```
Delay 600                          * Can be between 500 and 2000 mS
SEND UUUUUUUUUUUUU                 * Channel Seizure with 130 bits, range (96 - 316 bits)
CARRIER ON
DELAY 106                          * 127 bits of mark signal, range (55 - 205 bits)
SEND <80><0D><01><08>02201018<04><01>O#  * Caller ID data (Number Unavailable)
Delay 10
CARRIER OFF
Delay 250                          * must be greater than or = to 200 mS
Ring 1000                          * Second ring
Delay 5000                         * Silence between rings
Ring 1000                          * Third ring

Delay 7000

* Third Call - Visual Message Waiting ON

Ring 600                           * Alerting ring can be between 250 and 1200 mS
Delay 600                          * Can be between 500 and 2000 mS
SEND UUUUUUUUUUUUU                 * Channel Seizure with 130 bits, range (96 - 316 bits)
CARRIER ON
DELAY 106                          * 127 bits of mark signal, range (55 - 205 bits)
SEND <82><17><01><08>02201018<02><08>42457645<0B><01><FF>#   * Message Waiting
                                   * Indication data
Delay 10
CARRIER OFF
Delay 250                          * must be greater than or = to 200 mS
Ring 1000                          * Second ring
Delay 5000                         * Silence between rings
Ring 1000                          * Third ring
Delay 3000

** End of script
```

HOLLAND.SCR

```
** This script allows the user to simulate two calls using the Dutch format
** for Calling Line Identification Presentation (CLIP), according to the
** standard T 11-12E, Version 4.  The first call uses nominal DTMF tones,
** while the second call uses dual programmable sinewave generators to
** vary the frequency, amplitude, twist, and duration of the DTMF tones.
**


** Initialization

RingLevel 65                    * set ring voltage at 65VacRMS
Ringfreq 25                     * set ring frequency at 25Hz
Level -10                       * set DTMF at -10dBm per tone (ref. 600 ohms)
                                * since we are transmitting into a high-impedance
                                * load, the actual tone levels will be about 4-6dB
                                * higher.

** Start of call sequence #1 (Call from 0324871985)

Polarity Reverse
Delay 500                       * Must be 300 - 800 mS.
SendDTMF D0324871985C 80 75     * Generate CLIP string along with start and
                                * stop characters. Each DTMF digit is ON
                                * for 80 mS. with an interdigit delay of
                                * 75 mS.
Delay 250                       * Must be 0 - 1000 mS.
Ring 1000                       * First ring
Delay 4000
Hook Off                        * Incoming call is answered
Delay 2000
Polarity Normal                 * Restore telephone line polarity to normal
Delay 5000
Hook on                         * End of call


** Start of call sequence #2 (Unknown Number)
** Format: D0000000000C

Polarity Reverse
Delay 500                       * Must be between 300 and 800 mS.
Tone1Freq 941                   * Set frequency and amplitude for DTMF D (start character)
Tone2Freq 1633
```

```
Tone1Level -10          * Tone 1 is -10dBm
Tone2Level -8           * Tone 2 is -8dBm, resulting in a 2dB twist
Dualtone 70             * Generate DTMF D
Delay 70                * Interdigit delay
Tone1Freq 941           * Set tone frequencies to DTMF 0 - same amplitude as D
Tone2Freq 1336

Dualtone 70             * Generate DTMF 0 ten times
Delay 70                * 70 mS. ON, 70 mS. OFF
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Dualtone 70
Delay 70
Tone1Freq 852           * Set frequencies to DTMF C (terminating character)
Tone2Freq 1633
Dualtone 70             * Generate DTMF C
Delay 250               * Delay between the end of DTMF string and ringing
Ring 1000
Delay 4000
Hook Off                * Incoming call answered for 7 sec.
Delay 2000
Polarity Normal         * Restore normal polarity
Delay 5000
Hook on

** End of script
```

JAPAN.SCR

```
** This script simulates the Calling Line Identification (CLI) signal
** defined in NTT's Specifications. Critical timing parameters and
** signal levels are controllable.

**  Initialization

MODEM V23                       * Selects V23 FSK Modem Type
LEVEL 20                        * Sets the FSK Signal Level to -20 dBm
SNR 30                          * Sets the Signal-to-Noise Ratio to 30 dB
RingLevel 55                    * Sets the Ring Level to 55 Vrms
RingFreq 20                     * Sets the Ring Frequency to 20 Hz

** Begin Caller ID Sequence

Polarity Reverse                * Reverses the line polarity
Delay 150                       * Delay for 150 mS (should be >=100 mS)

Ring 500                        * Ring for 500 mS - CPE Activation Ringing (CAR)
Delay 500                       * Delay for 500 mS
Ring 500
Delay 500
Ring 500
Delay 500
Ring 500
Delay 500
Ring 500
Delay 500
Ring 500
WaitforOffHook 1000             * Wait for Off-Hook for 1000 mS - Should be already off-hook

** Data Transmission

Delay 200                       * Delay for 200 mS before commencing data transmission
Carrier ON                      * Turn carrier ON
Delay 50                        * Delay for 50 mS so that carrier is ON for that period
PARITY EVEN                     * Set parity
SEND <10><01><07><10><02><40><0C><02><0A>0335092111<10><03>
                * Send Caller ID data
PARITY NONE             * Set parity
SEND <8A><D3>                   * Send 16-bit Checksum (CRC-CCITT) from header <07> to ETX
<03>
Delay 20                        * Delay for 20 mS
```

```
Carrier OFF                 * Drop carrier
WaitForOnhook 1000          * Wait for On-Hook for 1000 mS
Delay 400                   * Delay for 400 mS

** Begin Ring Sequence

Ring 1000                   * Generate first ring
Delay 3000
Ring 1000
Delay 3000
Ring 1000
Delay 3000
Ring 1000
Delay 3000

* End of script
```

KOREA.SCR

```
*************************************************************************************************
** This script simulates the on-hook Caller ID for Korea as described in          **
** the Korea Telecom Standard Code: TSX-K193-01, revised in April 2000.           **
**                                                                                **
*************************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.           **
** Updated on 4 April 2001.                                                      **
*************************************************************************************************

** Initialization - Use default on-hook CO voltage level

MODEM BELL202          * Selects Bell 202 FSK Modem Type
Level -20              * FSK Transmit Level is -20 dBm (ref. 600 ohms).  Since we
                       * are transmitting into a high impedance load, the actual
                       * signal level will be about 4-6 dB higher.
SNR 35                 * FSK signal-to-noise ratio set at 35 dB
RingLevel 55     * Set ring level to 55 VAC
RingFreq 25            * Set ring frequency to 25 Hz

* Start of call sequence

Ring 1000              * Alerting Signal - Ring - must be 0-1000 mS
Delay 600              * Delay before start of transmission - must be 500-700 mS

SEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU   * Channel Seizure - 300 bits of 0101
CARRIER ON
DELAY 150              * 180 mark bits
SEND<80><1F><01><08>04050836<02><09>023470000<07><08><B1><AA><BC><A1><C0
><F9><C7>SEND <FD>#              * Send Caller ID packet.
                       * Date & Time: 04/05 @ 08:36
                       * Calling Number: 023470000
                       * Calling Name (KSC5601-encoded) B1AA,BCA1,C0F9,C7FD
                       * Checksum (automatically calculated)
DELAY 10               * Keep carrier ON for an extra 10 mS
CARRIER OFF
DELAY 500              * Delay before second Ring - must be > 250 mS
RING 1000              * Second Ring

** End of script
```

LONG_CAS.SCR

```
** This script allows the user to generate a long CAS tone at
** selected frequency and amplitude levels.

   Tone1Freq 2130          * Sets the frequency for CAS tone 1
   Tone2Freq 2750          * Sets the frequency for CAS tone 2
   Tone1Level -22          * Sets the amplitude for CAS tone 1
   Tone2Level -22          * Sets the amplitude for CAS tone 2
   Dualtone 10000          * Generates CAS tone for the specified
                           * duration

** End of script
```

LOOPLEN.SCR

```
* This script provides examples for simulating different loop lengths,
* including Short (0 km), Medium (3 km), and Long (6 km), using a 12kHz
* signal at 0 dBm.

**  Initialization

LineCurrent 40                  * Sets the Line Current to 40 mA
LEVEL 20                        * Sets the FSK Signal Level to -20 dBm
SNR 40                          * Sets the Signal-to-Noise Ratio to 40 dB
SPMLEVEL 0                      * Sets the Subscriber Pulse Metering Level to 0 dBm

Display SPM Tone on a 0 Km Artificial Line
LineLoop Short
SPMTone 12000 3000              * Generates a 12 kHz signal for 3 seconds

Delay 2000

Display SPM Tone on a 3 Km (24AWG non-loaded) Artificial Line
LineLoop Medium
SPMTone 12000 3000              * Generates a 12 kHz signal for 3 seconds

Delay 2000

Display SPM Tone on a 6 Km (24AWG non-loaded) Artificial Line
LineLoop Long
SPMTone 12000 3000              * Generates a 12 kHz signal for 3 seconds

Delay 2000

LineCurrent 10                  * Sets the Line Current back to 10 mA

*end of script
```

MEXICO.SCR

```
*************************************************************************************************
* Mexico Script -- In Spanish.  Illustrates Dual-Mode operation by                **
* generating 3 Caller ID calls with DTMF signaling, and another 3 with            **
* FSK.                                                                            **
*************************************************************************************************
* Script para la prueba funcional en formato DTMF y FSK del identificador         **
* de llamadas. El script debe ser ejecutado desde el programa 3500MENU            **
*************************************************************************************************

Level 20                              * Fija l nivel de la se¤al a -20 dBm
SNR 30                                * Fija la relacion se¤al a ruido a 30 dB
Polarity Normal                       * Fija la polaridad normal en la linea
DELAY 500

*************************************************************************
*                    PRUEBA DE DTMF
*************************************************************************

 *****  LLAMADA DTMF "1"

 POLARITY REVERSE            * Cambio de polaridad
 DELAY 300                           * Retardo de 300 mseg. antes de enviar
                                     * los datos DTMF
 senddtmf D 150 100
 SENDDTMF 1118888888C 100 100       * Envia el paquete DTMF

 DELAY 300                           * Retardo de 300 mseg.
 RING 1000                           * Se¤al de 1 segundo de ring
 DELAY 300
 RING 300
 POLARITY NORMAL             * Regresa la inversion de polaridad

 *****  FIN DE LA LLAMADA 1

 DELAY 500

 *****  LLAMADA DTMF "2"

 POLARITY REVERSE            * Cambio de polaridad
 DELAY 300                           * Retardo de 300 mseg. antes de enviar
                                     * los datos DTMF
 senddtmf D 150 100
```

```
 SENDDTMF 2228888888C 100 100      * Envia el paquete DTMF

 DELAY 300                         * Retardo de 300 mseg.
 RING 1000                         * Se¤al de 1 segundo de ring
 DELAY 300
 RING 300

POLARITY NORMAL                    * Regresa la inversion de polaridad

 *****  FIN DE LA LLAMADA 2

 DELAY 500

 *****  LLAMADA DTMF "3"

 POLARITY REVERSE            * Cambio de polaridad
 DELAY 300                         * Retardo de 300 mseg. antes de enviar
                                   * los datos DTMF
 senddtmf D 150 100
 SENDDTMF 3338888888C 100 100      * Envia el paquete DTMF

 DELAY 300
 RING 1000
 DELAY 300
 RING 300
 POLARITY NORMAL             * Regresa la inversion de polaridad

 *****  FIN DE LA LLAMADA 3

 DELAY 500

*************************************************************************
*                      PRUEBA DE FSK
*************************************************************************

 *****  LLAMADA FSK "1"

 RING 300
 DELAY 1800

 RING 300                          * Ring the line for 300 mS.
 DELAY 500                         * delay 500 mS before sending ICLID data.

 MULTIPLE
 DATETIME    08291345    *
 ICLID  8888888888                 * Send FSK packet.
 NAME "MENSAJE-FSK-#1"   *
 ENDMULTIPLE           *
```

```
DELAY 300

RING 1000
DELAY 500

*****  LLAMADA FSK "2"

RING 300                          * Ring the line for 300 mS.
DELAY 500                         * delay 500 mS before sending ICLID data.

MULTIPLE

DATETIME    08291345
ICLID  8888888888                 * Send FSK packet.
NAME "MENSAJE-FSK-#2"
ENDMULTIPLE

DELAY 300

RING 1000
DELAY 500

*****  LLAMADA FSK "3"

RING 300                          * Ring the line for 300 mS.
DELAY 500                         * delay 500 mS before sending ICLID data.

MULTIPLE
DATETIME    08291345    *
ICLID  8888888888                 * Send FSK packet.
NAME "MENSAJE-FSK-#3"   *
ENDMULTIPLE           *

RING 1000
DELAY 500

*************************************************************************
*
*                  FIN DE LA PRUEBA
*
*************************************************************************
```

NORWAY.SCR

```
*******************************************************************************
** This script simulates the on-hook Caller ID for Norway based on       **
** Telenor's "Utilization of the PSTN protocol over the local loop       **
** for display-related services" specification, dated 13 Jan. 1997.      **
**                                                                       **
*******************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators    **
** Updated on 7/26/1999.                                                 **
*******************************************************************************

** Initialization - Use default on-hook CO voltage level

  MODEM V23                     * Selects V23 FSK Modem
  Level -20                     * FSK Transmit Level is -20 dBm ref. 600 ohms.
                                * Since we are transmitting into a high
                                * impedance load, the actual level will be
                                * approx. 4-6dB higher.
  SNR 35                        * FSK Signal-to-noise ratio set at 35 dB
  RingLevel 55
  RingFreq 25

** Start of call sequence

* On-hook (Type I) Caller ID Simulation:

Ring 1000                       * Ring for 1000 mS
Delay 500                       * Quiet interval between rings for 500 mS
SEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU  * 250 mS of channel seizure
Carrier ON
Delay 150                       * Carrier ON for 150 mS or 180 bits.
StartCLI                        * This begins the Caller ID packet
 DATETIME 11071530              * Date and time: Nov 7, 3:30pm
 CALLING 022448246              * Calling Number 022448246
EndCLI                          * Ends the Caller ID packet, computes the checksum
                                * and sends it out.
Delay 10                        * Carrier ON for another 10 mS
Carrier OFF
Delay 3000

* OFF-Hook (Type II) Caller ID Simulation:

WaitForOffHook                  * Wait for the user to go off-hook

Tone1freq 425                   * Program SAS tone to be 425 Hz at -25 dBm
Tone1level -25
```

```
Tone1 200                    * Turn on SAS tone for 200 mS
delay 600                    * First 600 mS pause period
Tone1 200                    * Turn on SAS tone for another 200 mS
delay 1000                   * 1000 mS pause (can be up to 10 sec.)

                             * Define the Alert Tone characteristics

Tone1freq 2130               * Alert tone 1 frequency 2130 Hz
Tone1level -22               * Alert tone 1 amplitude -22 dBm
Tone2freq 2750               * Alert tone 2 frequency 2750 Hz
Tone1level -22               * Alert tone 2 amplitude -22 dBm

Dualtone 80                  * Generate Alert Tone (DT-AS) for 80 mS
DTMFAck D 200                * Wait for DTMF Ack. for up to 200 mS.
Delay 40
Level -20                    * FSK amplitude set at -20 dBm (ref. 600)
Carrier ON                   * Start of FSK signaling
Delay 66                     * Carrier ON for 66 mS
StartCLI                     * This begins the Caller ID packet
 DATETIME 11071530           * Date and time: Nov 7, 3:30pm
 CALLING 022448246           * Calling Number 022448246
EndCLI
Delay 10
Carrier OFF                  * Turn off the CARRIER

* End of Type II transmission

** End of Script
```

PORTUGAL.SCR

```
*********************************************************************************************
** This script simulates the on-hook Caller ID for Portugal according to           **
** the Portugal Telecom functional specification No. 122, dated Feb. 1999.         **
** This specification references the ETSI standards ETS 300 659-1 and -2.          **
**                                                                                 **
*********************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.             **
** Updated on 8/27/1999.                                                           **
*********************************************************************************************

** Initialization - Use default on-hook CO voltage level

MODEM V23               * Selects V23 Modem Type
Level -20               * FSK Transmit Level is -20 dBm (ref. 600 ohms).  Since we
                        * are transmitting into a high impedance load, the actual
                        * signal level will be about 4-6 dB higher.
SNR 35                  * FSK signal-to-noise ratio set at 35 dB
RingLevel 55    * Set ring level to 55 VAC
RingFreq 25             * Set ring frequency to 25 Hz

* Start of call sequence

Ring 250                * Alerting Signal - 250 mS. Must be 200-300 mS
Delay 650               * Delay before start of transmission - must be 500-800 mS

MULTIPLE                * Caller ID data content
      DATETIME 10201525
      ICLID 0296056789
ENDMULTIPLE

Delay 350               * Delay before normal ringing - must be 200-500 mS
Ring 1000               * Second ring
Delay 3000              * Silence between rings
Ring 1000               * Third ring

** End of script
```

PULSE.SCR

```
* This script examples illustrates the use of the displaypulse command
* to show the dialed pulse digits.

Display LIFT HANDSET AND DIAL
WaitforOffHook
displaypulse

** End of script
```

PULSEM.SCR

```
* This script example illustrates the use of the Measurepulse command, which
* provides timing information and PPS in response to pulse dialing.

Waitforoffhook
Display LIFT HANDSET AND BEGIN DIALING
measurepulse
Waitforonhook

** End of script
```

PULSETST.SCR

```
* This script performs pulse measurements and increments the test counters
* on the 3500 based on the results.  If a pulse is out of range, the test
* stops

      ClearLCD
      WriteCounter1 0
      WriteCounter2 0
      LEDBlink 4
      WriteLCD1 PLEASE GO OFF-HOOK
      WriteLCD2 AND DIAL 10 DIGITS
      WaitforOffHook
      DisplayPassFail
      PulseMakeRange 35 45
      PulseBreakRange 55 65
      PulsePPSRange 9 11
      MeasurePulse 10
      IF FAIL
         BEEP
      ENDIF

** End of script
```

SAUDIA.SCR

```
*********************************************************************************************
** This script simulates the on-hook Caller ID for Saudi Arabia, based on          **
** the standard TSP 3030 Issue 01. The call format for Saudi Arabia is             **
** DczxxxxxxxC where D = DTMF "D", c (optional) = category digit (0 thru 9)        **
** z = zone of the calling party (city code), xxxxxxx = 7 digit telephone          **
** number.  C = DTMF "C" stop code.                                                **
**                                                                                 **
*********************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.             **
** Updated on 7/26/1999.                                                           **
*********************************************************************************************

** Initialization - Use default on-hook CO voltage level

RingLevel 55                    * Set ring voltage at 55Vac RMS
Ringfreq 25                     * Set ring frequency at 25Hz
Level -15                       * Set DTMF at -15dBm  (Ref. 600 ohms).
                                * Since we are transmitting into a high-impedance
                                * load, the actual signal level will be approx.
                                * 6dB higher.

** Start of call sequence #1 (Call from 12-345-6789) using DTMF signaling

SendDTMF D123456789C 70 65      *Generate CLI string along with start character,
                                 * DTMF D, category of call (1 - regular subscriber),
                                 * stop character, DTMF C. Each DTMF digit is ON for
                                 * 70 mS. with an interdigit delay of 65 mS.
Delay 300                       * This is a programmable delay up to 65535 mS
Ring 1000                       * Programmable ring duration
Delay 4000

** End of script
```

SMS.SCR

```
*********************************************************************************************
** This script simulates 2 Supplementary Data Links Messages according          **
** to the ETSI draft specification ETS EN 300 659-3 V1.3.1                      **
*********************************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.          **
** Written on October 20, 2000                                                  **
*********************************************************************************************

** Initialization - Use default on-hook CO voltage level


 MODEM V23          * Selects V23 FSK Modem
 Level -20          * FSK Transmit Level is -20 dBm ref. 600.  Since we
                    * are transmitting into a high impedance load, the
                    * actual level will be approx. 4-6dB higher.
 SNR 35             * FSK Signal-to-noise ratio set at 35 dB


* Terminal Alerting Signal (TAS) can be a Dual Tone (DT-AS), a Ring Pulse
* (RP-AS), or a line reversal followed by DT-AS.  In these examples, we will
* use the third method.


* First Message  - Advice of Charge (Date & Time, CLI, Charge Parameter)

Polarity Reverse
Delay 150           * Must be greater than 100 mS
Tone1Freq 2130      * DT-AS Definition
Tone1Level -15
Tone2Freq 2750
Tone2Level -15
DualTone 100        * DT-AS Signal
Delay 200
SEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU     * Channel Seizure with 300 bits.
CARRIER ON
DELAY 150           * 180 bits of mark signal
SEND
<86><26><01><08>10201018<02><0A>0424576459<20><0E>FRF<00>0000023<2C>45#
                    * Date/Time: 20.10 @ 10:18AM
                    * CLI: 0424576459
                    * Charge Amount: 23,45 FRF
                    * # at the end calculates and transmits the checksum
```

```
Delay 5
CARRIER OFF
Delay 100
Polarity Normal          * Restore normal polarity
Delay 4000

* Second Message  - Short Message Service (Date & Time, Display Information)

Polarity Reverse
Delay 150                * Must be greater than 100 mS
Tone1Freq 2130           * DT-AS Definition
Tone1Level -15
Tone2Freq 2750
Tone2Level -15
DualTone 100             * DT-AS Signal
Delay 200
SEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU     * Channel Seizure with 300 bits.
CARRIER ON
DELAY 150                * 180 bits of mark signal
SEND <89><22><01><08>10201018<50><16><04>DRINK<20>COCA<20>COLA<20>TODAY#
                         * Date/Time: 20.10 @ 10:18AM
                         * Advertisement / Not stored
                         * DRINK COCA COLA TODAY
                         * # to generate checksum
Delay 5
CARRIER OFF
Delay 100
Polarity Normal          * Restore normal polarity
Delay 4000

** End of script
```

SNR_TEST.SCR

```
** Signal to noise Sensitivity Test
** SNR 40,30,20 and 10 dB at signal levels of  5,10,15,20,25,30,35,40,45 dBm
** Test helps identify signal drop out points for Caller ID telephones and
** display units

* Initialization

RINGLEVEL 55
MODEM BELL202


* Start of call sequence

Level 5
SNR 40
RING 500
DELAY 650
MULTIPLE
      DateTime 03141322
      ICLID 1
      NAME LVL5_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 10
SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 2
    NAME LVL10_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 15
SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 3
    NAME LVL15_SNR40
```

```
ENDMULTIPLE
*
DELAY 1200
Level 20
SNR 40
RING 500

DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 4
    NAME LVL20_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 25
SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 5
    NAME LVL25_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 30
SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 6
    NAME LVL30_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 35
SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 7
    NAME LVL35_SNR40
ENDMULTIPLE
*
DELAY 1200
```

```
Level 40
SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 8
    NAME LVL40_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 45

SNR 40
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 9
    NAME LVL45_SNR40
ENDMULTIPLE
*
DELAY 1200
Level 5
SNR 30
RING 500
DELAY 650
MULTIPLE
      DateTime 03141322
      ICLID 10
      NAME LVL5_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 10
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 11
    NAME LVL10_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 15
SNR 30
RING 500
```

```
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 12
    NAME LVL15_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 20
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 13
    NAME LVL20_SNR30
ENDMULTIPLE
*

DELAY 1200
Level 25
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 14
    NAME LVL25_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 30
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 15
    NAME LVL30_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 35
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
```

```
    ICLID 16
    NAME LVL35_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 40
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 17
    NAME LVL40_SNR30
ENDMULTIPLE
*
DELAY 1200
Level 45
SNR 30
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 18
    NAME LVL45_SNR30

ENDMULTIPLE
*
DELAY 1200
Level 5
SNR 20
RING 500
DELAY 650
MULTIPLE
      DateTime 03141322
      ICLID 19
      NAME LVL5_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 10
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 20
    NAME LVL10_SNR20
ENDMULTIPLE
```

```
*
DELAY 1200
Level 15
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 21
    NAME LVL15_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 20
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 22
    NAME LVL20_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 25
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322

ICLID 23
    NAME LVL25_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 30
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 24
    NAME LVL30_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 35
```

```
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 25
    NAME LVL35_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 40
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 26
    NAME LVL40_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 45
SNR 20
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 27
    NAME LVL45_SNR20
ENDMULTIPLE
*
DELAY 1200
Level 5
SNR 20
RING 500
DELAY 650

MULTIPLE
      DateTime 03141322
      ICLID 28
      NAME LVL5_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 10
SNR 10
RING 500
DELAY 650
```

```
MULTIPLE
    DateTime 03141322
    ICLID 29
    NAME LVL10_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 15
SNR 10
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 30
    NAME LVL15_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 20
SNR 10
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 31
    NAME LVL20_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 25
SNR 10
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 31
    NAME LVL25_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 30
SNR 10

RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 32
```

```
    NAME LVL30_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 35
SNR 10
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 33
    NAME LVL35_SNR10
ENDMULTIPLE
*
DELAY 1200
Level 40
SNR 10
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 34
    NAME LVL40_SNR10
ENDMULTIPLE
*
DELAY 1200
SNR 10
RING 500
DELAY 650
MULTIPLE
    DateTime 03141322
    ICLID 35
    NAME LVL45_SNR10
ENDMULTIPLE

** End of script
```

SPAIN.SCR

```
*******************************************************************************
** This script simulates the on-hook Caller ID for Spain as reported by    **
** industry sources.  It is based on the ETSI standard ETS 300 659-1.      **
**                                                                         **
*******************************************************************************
** Written for the Rochelle 3400, 3410, and 3500 Caller ID Simulators.     **
** Updated on 7/26/1999.                                                   **
*******************************************************************************

** Initialization - Use default on-hook CO voltage level


  MODEM V23                     * Selects V23 FSK Modem
  Level -20                     * FSK Transmit Level is -20 dBm ref. 600.  Since we
                                * are transmitting into a high impedance load, the
                                * actual level will be approx. 4-6dB higher.
  SNR 35                        * FSK Signal-to-noise ratio set at 35 dB
  RingLevel 55
  RingFreq 25

** Start of call sequence

Ring 1500                       * First ring
Delay 500                       * Must be at least 500 mS

MULTIPLE                        * Start collecting Multiple Message ICLID
  DateTime 06151345             * June 15, 1:45 PM
  ICLID 6175556789          * Calling Number (ICLID)
ENDMULTIPLE                 * Build and send Multiple Message format packet.

* The MULTIPLE command generates channel seizure, mark (carrier) signal then
* the proper message type, message length, parameter types, parameter lengths,
* and checksum.

Delay 2300                      * Please note total Ring off time is 3 seconds
Ring 1500                       * Second ring
Delay 6000                      * The first call was not answered.

* Second Call Sequence

Ring 1500                       * Second telephone call.
Delay 500
```

```
* Below is an example of building the multiple message signal from
* the ground up. The duration of the channel seizure and carrier ON
* periods can be adjusted for maximum flexibility.

SEND UUUUUUUUUUUUUUUUUUUU  * Channel Seizure signal
                           * 300 bits or 250 mS.
CARRIER ON
DELAY 150                  * 180 bits of mark (carrier) signal
SEND <80><16><01><08>06151345<02><0A>6175556789#
Delay 10                   * Keep carrier ON for an extra 10 mS.
CARRIER OFF

Delay 2500
Ring 1500                  * Second ring
Delay 3000                 * Silence between rings
Ring 1500                  * Third ring
Delay 3000

** End of script
```

SWEDEN.SCR

```
** This script allows the user to simulate two calls using the Swedish format
** for calling line identification.  The first call uses nominal DTMF tones,
** while the second call uses two programmable sinewave generators to
** vary the frequency, amplitude, twist, and duration of the DTMF tones.

** Initialization
LineCurrent 30                  * Programmable Line current = 30 mA
RingLevel 65                    * set ring voltage at 65VacRMS
Ringfreq 25                     * set ring frequency at 25Hz
Level 10                        * set DTMF at -10dBm

** Start of call sequence #1 (Call from 0324871985)

Polarity Reverse
Delay 250
SendDTMF D0324871985C 70 65     * Generate CLI string along with start and
                                * stop characters. Each DTMF digit is ON for
                                * 70 mS. with an interdigit delay of 65 mS
Delay 250
Polarity Normal                 * Restore telephone line polarity to normal
Ring 1000
Delay 4000
Hook Off
Delay 5000
Hook on

** Start of call sequence #2 (Restricted Call)
Polarity Reverse
Delay 250
Tone1Freq 770                   * Set frequency and amplitude for DTMF B (start character)
Tone2Freq 1633
Tone1Level 10                   * Tone 1 is -10dBm
Tone2Level 8                    * Tone 2 is -8dBm, resulting in a 2dB twist
Dualtone 70                     * Generate DTMF B
Delay 65                        * Interdigit delay

Tone1Freq 697                   * 'DTMF 1'
Tone2Freq 1209
Tone1Level -10
Tone2Level -8
Dualtone 70                     * Generate DTMF 1
Delay 65                        * Interdigit delay
```

```
Tone1Freq 941                   * 'DTMF 0'
Tone2Freq 1336
Tone1Level -10
Tone2Level -8
Dualtone 70                     * Generate DTMF 0
Delay 65                        * Interdigit delay

Tone1Freq 852                   * 'DTMF C'
Tone2Freq 1633
Tone1Level -10
Tone2Level -8
Dualtone 70                     * Generate DTMF C

Delay 250                       * Delay between the end of DTMF string and ringing
Polarity Normal                 * Restore normal polarity
Ring 1000
Delay 4000
Hook Off
Delay 5000
Hook on

** End of script
```

TAIWAN.SCR

```
* This script lists the conformance tests listed by the Taiwan Directorate
* General of Telecommunications guidelines for Caller Identity Service
* Type Approval, dated October 1999.  This specification references the
* ETSI 300-659-1 specifications for Calling Line Identification.

**  FSK TESTS

* General Setup
RINGLEVEL 75
RINGFREQ 20
LINECURRENT 40
MODEM V23
POLARITY NORMAL
CLEARLCD

WRITELCD1     TAIWAN DGT
WRITELCD2  FSK CALLER ID TESTS
DELAY 1000
CLEARLCD
WRITELCD1 TIMING TOLERANCE
WRITELCD2 SECTION 4.3.1
DELAY 500

CLEARLCD
WRITELCD1 TEST #1 (DETECT)
WRITELCD2 DT1:FSK1
DELAY 500
* Test DT1:FSK1 (Section 4.3.1)
TONE1FREQ 2120
TONE2FREQ 2737
TONE1LEVEL -14        * The low freq. tone level equals the high freq. tone
                      * level -6 dB (twist)
TONE2LEVEL -8         * The high frequency tone is -10dBv or approx. -10+2
                      * = -8 dBm
DUALTONE 90
DELAY 200
MULTIPLE
DATETIME 03241404
ICLID 1111111111
ENDMULTIPLE
DELAY 700
```

```
* Test DT2:FSK1 (Section 4.3.1)
TONE1FREQ 2140
TONE2FREQ 2763
TONE1LEVEL -14
TONE2LEVEL -8
CLEARLCD
WRITELCD1 TEST #2 (DETECT)
WRITELCD2 DT2:FSK1
DELAY 500
DUALTONE 110
DELAY 200
MULTIPLE
DATETIME 03241405
ICLID 2222222222
ENDMULTIPLE
DELAY 700

* Test DT3:FSK1 (Section 4.3.1)
CLEARLCD
WRITELCD1 TEST #3 (REJECT)
WRITELCD2 DT3:FSK1
DELAY 500
TONE1FREQ 2120
TONE2FREQ 2737
TONE1LEVEL -34
TONE2LEVEL -28
DUALTONE 50
DELAY 200
MULTIPLE
DATETIME 03241406
ICLID 000000
ENDMULTIPLE
DELAY 700

* Test DT4 (Section 4.3.1)
CLEARLCD
WRITELCD1 TEST #4 (NO DATA)
WRITELCD2 DT4
DELAY 500
TONE1FREQ 2140
TONE2FREQ 2763
TONE1LEVEL -34
TONE2LEVEL -28
DUALTONE 110
DELAY 700

* Test DT5:FSK1 (Section 4.3.1)
```

```
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #5 (DETECT)
WRITELCD2 DT5:FSK1
DELAY 500
DUALTONE 100
DELAY 200
MULTIPLE
DATETIME 03241407
ICLID 3333333333
ENDMULTIPLE
DELAY 500
CLEARLCD
WRITELCD1 FREQ/LVL/TWIST/INTF.
WRITELCD2 TOLERANCE (4.4.1)
DELAY 700

* Test DT5:FSK1 (Section 4.4.1)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #6 (DETECT)
WRITELCD2 DT5:FSK1
DELAY 500
DUALTONE 100
DELAY 200
MULTIPLE
DATETIME 03241408
ICLID 4444444444
ENDMULTIPLE
DELAY 700

* Test DT5:FSK2 (Section 4.4.1)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #7 (DETECT)
WRITELCD2 DT5:FSK2
DELAY 500
DUALTONE 100
DELAY 200
```

```
SPACEFREQ 2068
MARKFREQ 1280
SPACELEVEL -28
MARKLEVEL -34
SNR 25
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><16><01><08>02341409<02><0A>5555555555#
DELAY 5
VARFSKCARRIER OFF
NOISE OFF
DELAY 700

CLEARLCD
WRITELCD1 CHANNEL SEIZURE
WRITELCD2 SECTION 4.5.1
DELAY 500

* Test DT5:FSK1:TP1 (Section 4.5.1)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #8 (DETECT)
WRITELCD2 DT5:FSK1:TP1
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><30><11><01><01><01><08>08131430<02><0A>08362-5234
VARFSKSEND <03><0B>022343-3657<07><08>y.d.chen#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

CLEARLCD
WRITELCD1 MARK VARIATION
WRITELCD2 SECTION 4.5.2
DELAY 500
```

```
* Test DT5:FSK1:TP4 (Section 4.5.2)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #9 (DETECT)
WRITELCD2 DT5:FSK1:TP4
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 150       * Assuming a Mark duration of 150 ms (180 bits), specified as MK3
VARFSKSEND <80><30><11><01><01><01><08>08131430<02><0A>08362-5234<03>
VARFSKSEND <0B>022343-3657<07><08>y.d.chen#
DELAY 5
VARFSKCARRIER OFF
DELAY 500

CLEARLCD
WRITELCD1 MESSAGE TYPE
WRITELCD2 SECTION 4.5.3
DELAY 700

* Test DT5:FSK1:TP5 (Section 4.5.3)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #10 (DETECT)
WRITELCD2 DT5:FSK1:TP5
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <81><30><11><01><01><01><08>08131430<02><0A>08362-5234<03>
```

```
VARFSKSEND <0B>022343-3657<07><08>y.d.chen#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

CLEARLCD
WRITELCD1 INCORRECT CHECKSUM
WRITELCD2 SECTION 4.5.4
DELAY 500

* Test DT5:FSK1:TP6 (Section 4.5.4)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #11 (REJECT)
WRITELCD2 DT5:FSK1:TP6
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><30><11><01><01><01><08>08131430<02><0A>08362-5234<03>
VARFSKSEND <0B>022343-3657<07><08>y.d.chen<2D>
DELAY 5
VARFSKCARRIER OFF
DELAY 700

CLEARLCD
WRITELCD1 PRESENTATION LAYER
WRITELCD2 SECTION 4.6
DELAY 500
* Test DT5:FSK1:TP7 (Section 4.6)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #12 (IGNORE)
WRITELCD2 DT5:FSK1:TP7
DELAY 500
DUALTONE 100
```

```
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><30><11><01><02><01><08>08131430<02><0A>08362-5234<03>
VARFSKSEND <0B>022343-3657<07><08>y.d.chen#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

* Test DT5:FSK1:TP8 (Section 4.6)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #13 (DETECT)
WRITELCD2 DT5:FSK1:TP8
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><2D><01><08>08131430<02><0A>08362-5234<03>
VARFSKSEND <0B>022343-3657<07><08>y.d.chen#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

* Test DT5:FSK1:TP9 (Section 4.6)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #14 (DETECT)
WRITELCD2 DT5:FSK1:TP9
DELAY 500
DUALTONE 100
```

```
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><27><11><01><01><01><08>08131430<03><0B>022343-3657<04>
VARFSKSEND <01>O<07><08>y.d.chen#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

* Test DT5:FSK1:TP11 (Section 4.6)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #15 (MSG WTG)
WRITELCD2 DT5:FSK1:TP11
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><03><11><01><81>#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

* Test DT5:FSK1:TP12 (Section 4.6)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #16 (DETECT)
WRITELCD2 DT5:FSK1:TP12
DELAY 500
DUALTONE 100
DELAY 200
```

```
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><29><11><01><01><01><08>08131430<02><0A>08362-5234<03>
VARFSKSEND <0B>022343-3657<08><01>P#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

* Test DT5:FSK1:TP13 (Section 4.13)
TONE1FREQ 2130
TONE2FREQ 2750
TONE1LEVEL -18
TONE2LEVEL -18
CLEARLCD
WRITELCD1 TEST #17 (DETECT)
WRITELCD2 DT5:FSK1:TP13
DELAY 500
DUALTONE 100
DELAY 200
SPACEFREQ 2100
MARKFREQ 1300
SPACELEVEL -18
MARKLEVEL -18
VARFSKSEND UUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VARFSKCARRIER ON
DELAY 67
VARFSKSEND <80><4B><11><01><01><01><08>08131430<02><12>022343-3657-123456
VARFSKSEND <03><12>08362-5234-9876543<07><14>maximum<20>test<20>message#
DELAY 5
VARFSKCARRIER OFF
DELAY 700

** DTMF TESTS
CLEARLCD
WRITELCD1     TAIWAN DGT
WRITELCD2 DTMF CALLER ID TESTS
DELAY 1000
CLEARLCD
WRITELCD1 DTMF SIGNALING
WRITELCD2 SECTION 5.4
DELAY 700
* Test DS1:TC1 (Section 5.4)
CLEARLCD
```

```
WRITELCD1 TEST #18 (DETECT)
WRITELCD2 DS1:TC1
DELAY 500
LEVEL -13
TONE1LEVEL -13
TONE2LEVEL -13
SENDDTMF D00214567890123C 70 70
DELAY 1000

* Test DS2:TC1 (Section 5.4)
CLEARLCD
WRITELCD1 TEST #19 (DETECT)
WRITELCD2 DS2:TC1
DELAY 500
TONE1LEVEL -24     * HIGH GROUP LEVEL
TONE2LEVEL -29     * LOW GROUP LEVEL
TONE1FREQ 1666
TONE2FREQ 960
DUALTONE 90        * D
DELAY 90
TONE1FREQ 1363
TONE2FREQ 960
DUALTONE 90        * 0
DELAY 90
DUALTONE 90        * 0
DELAY 90
TONE1FREQ 1363
TONE2FREQ 711
DUALTONE 90        * 2
DELAY 90
TONE1FREQ 1233
TONE2FREQ 711
DUALTONE 90        * 1
DELAY 90
TONE1FREQ 1233
TONE2FREQ 785
DUALTONE 90        * 4
DELAY 90
TONE1FREQ 1363
DUALTONE 90        * 5
DELAY 90
TONE1FREQ 1507
DUALTONE 90        * 6
DELAY 90
TONE1FREQ 1233
TONE2FREQ 869
DUALTONE 90         * 7
DELAY 90
```

```
TONE1FREQ 1363
DUALTONE 90        * 8
DELAY 90
TONE1FREQ 1507
DUALTONE 90        * 9
DELAY 90
TONE1FREQ 1363
TONE2FREQ 960
DUALTONE 90        * 0
DELAY 90
TONE1FREQ 1233
TONE2FREQ 711
DUALTONE 90        * 1
DELAY 90
TONE1FREQ 1363
DUALTONE 90       * 2
DELAY 90
TONE1FREQ 1507
DUALTONE 90       * 3
DELAY 90
TONE1FREQ 1666
TONE2FREQ 869
DUALTONE 90        * C
DELAY 90
DELAY 1000

* Test DS3:TC1 (Section 5.4)
CLEARLCD
WRITELCD1 TEST #20 (REJECT)
WRITELCD2 DS3:TC1
DELAY 500
TONE1LEVEL -24     * HIGH GROUP LEVEL
TONE2LEVEL -29     * LOW GROUP LEVEL
TONE1FREQ 1600
TONE2FREQ 922
DUALTONE 30        * D
DELAY 30
TONE1FREQ 1309
TONE2FREQ 922
DUALTONE 30        * 0
DELAY 30
DUALTONE 30        * 0
DELAY 30
TONE1FREQ 1309
TONE2FREQ 683
DUALTONE 30        * 2
DELAY 30
TONE1FREQ 1185
```

```
TONE2FREQ 683
DUALTONE 30       * 1
DELAY 30
TONE1FREQ 1185
TONE2FREQ 754
DUALTONE 30       * 4
DELAY 30
TONE1FREQ 1309
DUALTONE 30       * 5
DELAY 30
TONE1FREQ 1447
DUALTONE 30       * 6
DELAY 30
TONE1FREQ 1185
TONE2FREQ 835
DUALTONE 30        * 7
DELAY 30
TONE1FREQ 1309
DUALTONE 30        * 8
DELAY 30
TONE1FREQ 1447
DUALTONE 30       * 9
DELAY 30
TONE1FREQ 1309
TONE2FREQ 922
DUALTONE 30       * 0
DELAY 30
TONE1FREQ 1185
TONE2FREQ 683
DUALTONE 30       * 1
DELAY 30
TONE1FREQ 1309
DUALTONE 30      * 2
DELAY 30
TONE1FREQ 1447
DUALTONE 30      * 3
DELAY 30
TONE1FREQ 1600
TONE2FREQ 835
DUALTONE 30      * C
DELAY 1000

* Test DS4:TC1 (Section 5.4)
CLEARLCD
WRITELCD1 TEST #21 (DETECT)
WRITELCD2 DS4:TC1
DELAY 500
TONE1LEVEL -3     * HIGH GROUP LEVEL
```

```
TONE2LEVEL -8     * LOW GROUP LEVEL
TONE1FREQ 1666
TONE2FREQ 960
DUALTONE 90        * D
DELAY 90
TONE1FREQ 1363
TONE2FREQ 960
DUALTONE 90       * 0
DELAY 90
DUALTONE 90       * 0
DELAY 90
TONE1FREQ 1363
TONE2FREQ 711
DUALTONE 90       * 2
DELAY 90
TONE1FREQ 1233
TONE2FREQ 711
DUALTONE 90       * 1
DELAY 90
TONE1FREQ 1233
TONE2FREQ 785
DUALTONE 90       * 4
DELAY 90
TONE1FREQ 1363
DUALTONE 90       * 5
DELAY 90
TONE1FREQ 1507
DUALTONE 90       * 6
DELAY 90
TONE1FREQ 1233
TONE2FREQ 869
DUALTONE 90        * 7
DELAY 90
TONE1FREQ 1363
DUALTONE 90        * 8
DELAY 90
TONE1FREQ 1507
DUALTONE 90       * 9
DELAY 90
TONE1FREQ 1363
TONE2FREQ 960
DUALTONE 90       * 0
DELAY 90
TONE1FREQ 1233
TONE2FREQ 711
DUALTONE 90       * 1
DELAY 90
TONE1FREQ 1363
```

```
DUALTONE 90       * 2
DELAY 90
TONE1FREQ 1507
DUALTONE 90       * 3
DELAY 90
TONE1FREQ 1666
TONE2FREQ 869
DUALTONE 90       * C
DELAY 1000

* Test DS5:TC1 (Section 5.4)
CLEARLCD
WRITELCD1 TEST #22 (DETECT)
WRITELCD2 DS5:TC1
DELAY 500
TONE1LEVEL -3     * HIGH GROUP LEVEL
TONE2LEVEL -8     * LOW GROUP LEVEL
TONE1FREQ 1600
TONE2FREQ 922
DUALTONE 50       * D
DELAY 50
TONE1FREQ 1309
TONE2FREQ 922
DUALTONE 50       * 0
DELAY 50
DUALTONE 50       * 0
DELAY 50
TONE1FREQ 1309
TONE2FREQ 683
DUALTONE 50       * 2
DELAY 50
TONE1FREQ 1185
TONE2FREQ 683
DUALTONE 50       * 1
DELAY 50
TONE1FREQ 1185
TONE2FREQ 754
DUALTONE 50       * 4
DELAY 50
TONE1FREQ 1309
DUALTONE 50       * 5
DELAY 50
TONE1FREQ 1447
DUALTONE 50       * 6
DELAY 50
TONE1FREQ 1185
TONE2FREQ 835
DUALTONE 50       * 7
```

```
DELAY 50
TONE1FREQ 1309
DUALTONE 50        * 8
DELAY 50
TONE1FREQ 1447
DUALTONE 50       * 9
DELAY 50
TONE1FREQ 1309
TONE2FREQ 922
DUALTONE 50       * 0
DELAY 50
TONE1FREQ 1185
TONE2FREQ 683
DUALTONE 50       * 1
DELAY 50
TONE1FREQ 1309
DUALTONE 50      * 2
DELAY 50
TONE1FREQ 1447
DUALTONE 50      * 3
DELAY 50
TONE1FREQ 1600
TONE2FREQ 835
DUALTONE 50      * C
DELAY 50
CLEARLCD
WRITELCD1      END OF TESTS

** end of script
```

TONES.SCR

```
* This example script demonstrates some network tones used in North America.


SNR 48   * No Noise

************
* Dial tone
************
Display Dial Tone Test: (350 & 440 Hz at -20 dBm)
Tone1freq 350
Tone2freq 440
Tone1Level 20
Tone2Level 20
DualTone 10000                  * 10 Sec dial tone

********************************
* Message Waiting Indicator Tone
********************************
Display Message Waiting Indicator Tone Test: (350 & 440 Hz at -20 dBm)
Tone1freq 350
Tone2freq 440
Tone1Level 20
Tone2Level 20
Loop 10                         * 10 bursts of 0.1 sec ON, 0.1 Sec OFF
  DualTone 100   * 0.1 sec tone
  Delay 100      * 0.1 sec silence
EndLoop
DualTone 10000                  * 10 Sec steady dial tone


************************************
* Recall Dial Tone / Confirmation Tone
************************************
Display Recall Dial Tone / Confirmation Tone Test: (350 & 440 Hz at -20 dBm)
Tone1freq 350
Tone2freq 440
Tone1Level 20
Tone2Level 20
Loop 3                          * 3 bursts of 0.1 sec ON  0.1 Sec OFF
  DualTone 100   * 0.1 sec tone
  Delay 100                     * 0.1 sec silence
```

```
EndLoop
DualTone 10000                  * 10 Sec steady dial tone


***********
* Line Busy

***********
Display Line Busy Tone Test: (480 & 620 Hz at -30 dBm)
Tone1freq 480
Tone2freq 620
Tone1Level 30
Tone2Level 30
Loop 50                         * 50 bursts of busy tone
  DualTone 500                  * 0.5 sec tone
  Delay 500                     * 0.5 sec silence
EndLoop

***************
* Re-Order Tone
***************
Display Re-Order Tone Test: (480 & 620 Hz at -30 dBm)
Tone1freq 480
Tone2freq 620
Tone1Level 30
Tone2Level 30
Loop 50                         * 50 bursts of re-order tone
  DualTone 250                  * 0.25 sec tone
  Delay 250                     * 0.25 sec silence
EndLoop

*****************
* Audible Ringing
*****************
Display Audible Ringing Test: (440 & 480 Hz at -30 dBm)
Tone1freq 440
Tone2freq 480
Tone1Level 30
Tone2Level 30
Loop 4                          * 4 rings
  DualTone 2000                 * 2 sec ring ON
  Delay 4000                    * 4 sec silence
EndLoop

** End of Script
```

UK_BT.SCR

```
** This script simulates the Calling Line Identification (CLI) signal
** defined in BT's SIN 227 specification for the United Kingdom. Critical
** timing parameters and signal levels are controllable.

**  Initialization

MODEM V23                       * Select V23 FSK Modem
LEVEL 20                        * FSK level is -20 dBm
SNR 30                          * FSK Signal-to-Noise Ratio is 30 dB
Tone1freq 2130                  * Alert Tone frequency selection (2130Hz+2750Hz)
Tone2freq 2750
Tone1Level 22                   * Alert Tone amplitude selection (-22 dBm per tone)
Tone2Level 22


** Start of call sequence

POLARITY REVERSE                * Reverse the line polarity
DELAY 150                       * Wait 150 mS (should be >=100mS)
Dualtone 100                    * Alert signal ON (should be between 88 and 110 mS)
DELAY 60                        * Delay 60 mS (CPE must present DC wetting pulse here)

STARTCLI                        * Start of CLI packet (Message Type 80Hex) message
                                * and parameter definition

    DATETIME 11071530           *Date and time: Nov 7, 3:30pm
    CALLING 01202824698         *Calling number: 01202824698
    CALLED 01202555789          *Called number: 01202555789
    NAME JOE_DOE                *Calling name: JOE_DOE
ENDCLI                          * Calculate checksum and transmit FSK data

DELAY 250                       * Wait 250 mS after sending data
POLARITY NORMAL                 * Restore normal polarity prior to start of ringing
RING 400                        * Ring: 400mS ON, 200mS OFF, 400mS ON
DELAY 200
RING 400

** End of script
```

VAR_CAS.SCR

```
** This script allows the user to vary the level and frequency of CAS
** tone combinations.

   Tone1Freq 2130                  * Default tone1 frequency
   Tone2Freq 2750                  * Default tone2 frequency

** Test tones at various levels with no twist
** Dual tones are generated at -48/-48, -47/-47....-5/-5 dBm

   Tone1Level -48                  * Tone1 starts at -48dBm
   Tone2Level -48                  * Tone2 starts at -48dBm
   Loop 43
     Dualtone 80                   * Send tone1+tone2 for 80 mS
     Tone1Level +                  * Increase tone1 amplitude by 1 dB per loop
     Tone2Level +                  * Increase tone2 amplitude by 1 dB per loop
     Delay 1000                    * Wait for one second
   EndLoop
   Delay 2000

**  Test tones at varying twist levels
**  Dual tones generated are -48/-5, -47/-6, -46/-7...-5/-48 dBm

   Tone1Level -48                  * Tone1 starts at -48dBm
   Tone2Level -5                   * Tone2 starts at -5 dBm
   Loop 43
     Dualtone 80                   * Send tone1+tone2 for 80 mS
     Tone1Level +                  * Increase tone1 amplitude by 1 dB per loop
     Tone2Level -                  * Decrease tone2 amplitude by 1 dB per loop
     Delay 1000                    * Wait for one second
   EndLoop
   Delay 2000

**  Generate 100 CAS tone combinations varying tone2 from 2750 to 2850Hz

   Tone1Level -20                  * Set tone1 level to -20 dBm
   Tone2Level -20                  * Set tone2 level to -20 dBm
   Tone1Freq 2130
   Tone2Freq 2750

   Loop 100
     Dualtone 80                   * Generate CAS tone for 80 mS
     Tone2Freq +                   * Increase the frequency of tone2 by 1Hz per loop
     Delay 1000
```

```
   EndLoop
   Delay 2000
** Generate 100 CAS tone combinations by varying tone1 from 2130 down to 2030Hz

   Tone1Level -20
   Tone2Level -20
   Tone1Freq 2130
   Tone2Freq 2750

   Loop 100
     Dualtone 80                  * Generate CAS tone for 80 mS
     Tone1Freq -                  * Decrement tone1 by 1 Hz per loop
     Delay 1000
   EndLoop
   Delay 2000

** End of script
```

VARFSK.SCR

```
* This script allows the user to vary the baud rate, mark and space
* frequencies and levels.

LineCurrent 30
MODEM BELL202
LEVEL 20
SNR 40
RingLevel 55
RingFreq 20
FSKBaud 1200                    *can go from 1000bps to 1400bps
MarkFreq 1200                   *can go from 1000 Hz to 1400 Hz
SpaceFreq 2200                  *can go from 2000 Hz to 2400 Hz
MarkLevel 20                    *can go from 1 dB to 48 dB
SpaceLevel 14                   *can go from 1 dB to 48dB

ring
delay 500
VarFskSend UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
VarFskCarrier  On
delay 150
varfskSend <04><0F>050510305551234<F6>
VarFskCarrier Off

LineCurrent 10                  * Sets the Line Current back to 10 mA

** End of Script
```