



Dialup Data DownLoader

Modem Model Number: DL110



OPERATING INSTRUCTIONS AND PROGRAMMING MANUAL

Quality Communication Products by

DC SECURITY PRODUCTS, INC

***TO DOWNLOADER DL110 CUSTOMERS:
IT IS REQUIRED THAT YOU CURRENTLY OWN OR
PURCHASE A QUALITY PC MODEM CABLE FOR
CONNECTION FROM YOUR COMPUTER TO THE
DOWNLOADER DL110 FOR PROPER OPERATION.***

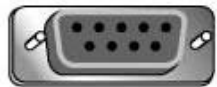
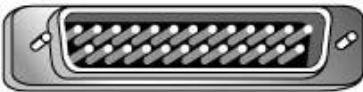


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INTRODUCTION

The **Securcomm DownLoader DL110** modem is designed for use on standard two wire dialup circuits. The DL110 supports the following standards: V.22bis, V.22 A&B, Bell 212A and Bell 103J. The DTE interface is compatible with V.24 (RS-232-C), and operates in an asynchronous, auto baud mode. All Standard data rates from 300bps to 2400bps are supported by the DL110. In addition, the Bell 103 mode is supported in this unique modem, which allows the DL110 to communicate at data rates 300bps to 110bps and lower. The auto dial modes and configuration controls are AT compatible making programming a snap. The DL110 is packaged with power supply, Telco cord, and power cable with flying leads for direct wiring to a 12VDC connection.

DOWNLOADER DL110 FRONT LIGHTS

MR Modem Ready **OH** Off Hook **TR** Terminal Ready **CD** Carrier Detect
SD Send Data **AA** Auto Answer **RD** Receive Data **HS** High Speed

CONNECTING TO THE DOWNLOADER DL110 DTE

The DTE connector provides standard RS-232 signaling. The following signals are available:

DTE CONNECTOR INFORMATION TABLE

PIN#	SIGNAL DESCRIPTION	SOURCE	COMMENTS /NOTES
PIN 1	Chassis Ground	DTE / DCE	
PIN 2	Transmit Data	DTE	Activates SD Light on Front of Unit
PIN 3	Receive Data	DCE	Activates RD Light on Front of Unit
PIN 4	Request To Send	DTE	
PIN 5	Clear To Send	DCE	
PIN 6	Data Set Ready	DCE	Activates MR Light on Front of Unit
PIN 7	Signal Ground	DTE / DCE	
PIN 8	Carrier Detect	DCE	Activates CD Light on Front of Unit
PIN 20	Data Terminal Ready	DTE	Activates TR Light on Front of Unit
PIN 22	Ring Indicator	DCE	

SMART AND DUMB MODES OF OPERATION

All **Securcomm DownLoader DL110** modems are factory configured for the smart mode of operation. The smart mode means that the DL110 will respond to AT commands. Once the units have been configured for a specific application, it is sometimes desirable to place them in the dumb mode of operation (please refer to the AT%D command in section 5). In the dumb mode, the modem will no longer respond to AT commands. Therefore the configuration cannot be changed inadvertently. If the unit is operating in dumb mode and it becomes necessary to return it to smart mode, please perform the following steps:

- 1 **Locate the 2 switches that are positioned next to the 25-pin DTE connector (DB25) on the back of the modem.**
- 2 **Power the modem off.**
- 3 **Power the modem on and depress the top switch within ten seconds. During the ten-second period when the upper switch is being monitored, all lights on the front panel of the modem will be momentarily (quick burst) illuminated.**
- 4 **The modem will now be in smart mode. If it is intended that the modem remain in smart mode, it will be necessary to save the new configuration using the AT&W command described in section 4.**

BASIC AT CORE COMMANDS

The following standard AT core commands are available when the modem is in the smart mode:

AT	Attention Prefix Command
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Precedes all commands except the escape sequence (+++) and the repeat (AA) command. When entered alone, it causes no action but the return of result code 0, "OK."

AA	Re-execute Command
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The modem behaves as though the last command line had been re-sent by the DTE. "A" will repeat all the commands in the command buffer.

+++	Escape sequence command
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The Escape Sequence allows programming to command state.

AT CONFIGURATION COMMANDS

The following standard AT configuration and control commands are available to create a command when the modem is operating in smart mode. The following commands are added to the base Attention Prefix Command (AT) to accomplish programming desired. A command line has a prefix, a body, and a terminator. Each command line must begin with the character sequence AT and must be terminated by a carriage return. The basic commands consist of single ASCII characters, or single characters preceded by a prefix character (e.g., "&"), followed by a decimal parameter.

Example: {AT + L3 + &W } (This command activates High Volume on the speaker – Pg 7)
Prefix Body Terminator

The AT sequence may be followed by any number of commands in sequence, except for commands such as Z, D, or A. Commands following commands Z, D, or A on the same command line will be ignored. Any missing decimal parameters are evaluated as Zero. The following standard AT commands are available when the modem is operating in smart mode:

A	Answer
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The modem will go off-hook and attempt to answer an incoming call if correct conditions are met.

Bn	CCITT or Bell
B0	Selects CCITT operation at 300 or 1200 bps.
B1	Selects BELL operation at 300 or 1200 bps. (Default)

When the **Securcomm DL110** modem is configured to allow either option, the modem will select Bell or CCITT modulation for a line speed connection of 300 or 1200 bps according to the parameter supplied. Any other line speed will use a CCITT modulation standard.

Cn	Carrier Control
C0	Carrier signal off until ACT1 or ATZ (reset) command is issued.
C1	Carrier signal on; restores automatic carrier signal on/off switching; carrier signal remains on when modem originates or answers a call or is connected to another modem

This command is for compatibility only, and has no effect other than returning a result code.

AT CONFIGURATION COMMANDS - CONTINUED

Dn	Dial
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This command directs the modem to go on-line, dial according to the string entered and attempt to establish a connection. If no dial string is supplied, the modem will go on-line and attempt the handshake in originate mode. **NOTE:** If the ATD command is issued before the S1 register has cleared, the modem will respond with the NO CARRIER result code.

Dial Modifiers. The valid dial string parameters are described below. Punctuation characters may be used for clarity, with parentheses, hyphen, and spaces being ignored.

Dial Modifier	Description
0-9#* ABCD	Numbers, Digits or Characters for dialing.
P	Pulse Dial (Factory Setting/Default).
T	Tone dial.
!	Hookflash.
@	Wait for quiet answer (no answer tone transmitted).
W	Wait for dial tone.
'	Delay processing of next character by value in register S8
R	Reverse Mode (to originate a call in answer mode)
;	Return to command state after dialing.
S=n	Dial the number stored in location "n".

En	Character Echo – Command State
E0	Disables character echo in command state.
E1	Enables character echo in command state. (Default)

The **Securcomm DL110** modem enables or disables the echo of characters to the DTE according to the parameter supplied. This displays characters on the PC Screen / Monitor in command state.

Fn	Character Echo – Online State
F0	Enable character echo in on-line state
F1	Disable character echo in on-line state.

The **Securcomm DL110** modem enables or disables the echo of characters to the DTE according to the parameter supplied. This displays characters on the PC Screen / Monitor in on-line state.

Hn	Disconnect (Hang-Up)
H0	Go on hook (hang up).
H1	Line and auxiliary relays off-hook.
H2	Line relays only off-hook.

This command initiates a hang up sequence.

AT CONFIGURATION COMMANDS - CONTINUED

In	Identification
I0	Reports product identification code.
I1	Reports a checksum on firmware ROM; return checksum.
I2	Reports a checksum on firmware ROM; returns OK or ERROR.
I3	Reports firmware revision (VX.XXX) model code.
I4	Reports firmware copyright revision.

The **DL110** modem reports to the DTE the requested result according to the command parameter.

Ln	Speaker Volume
L0	Low volume.
L1	Low volume. (Default)
L2	Medium volume.
L3	High volume.

The **DL110** modem sets the speaker volume control according to the parameter supplied.

Mn	Speaker Control
M0	Speaker is always off.
M1	Speaker is on during call connection, but off when receiving carrier. (Default)
M2	Speaker is always on.
M3	Speaker is off when receiving carrier and at dialing, but on during answering.

The **Securcomm DL110** modem sets the speaker activation according to the parameter selected.

On	Return to On-Line Data Mode
O0	Enters on-line data mode, without a retrain.
O1	Enters on-line data mode with a retrain.

This command determines how the modem will enter the on-line data mode.

Qn	Quiet Results Codes Control
Q0	Enables result codes to the DTE. (Default)
Q1	Disables result codes to the DTE.

The command enables or disables the sending of result codes to the DTE according to the parameter supplied.

Sn	Read/Write S-Register
Sn	Establishes S-Register n as the last register accessed.
Sn=v	Sets S-Register n to the value v.
Sn?	Reports the value of S-Register n.

The modem selects an S-Register, performs an S-Register read or writes function, or reports the value of an S-Register.

AT CONFIGURATION COMMANDS - CONTINUED

Vn	Result Code Form
V0	Enables short-form (terse) result codes.
V1	Enables long-form (verbose) result codes. (Default)

This command selects the sending of short-form or long-form result codes to the DTE.

Xn	Extended Result Codes:
X0	Disables monitoring of busy tones, sends only OK, CONNECT, RING, NO CARRIER, ERROR, and NO ANSWER result codes. Blind dialing is enabled.
X1	Disables monitoring of busy tones, sends only OK, CONNECT, RING, NO CARRIER, ERROR, NO ANSWER, and CONNECT XXXX*. Blind dialing is enabled.
X2	Disables monitoring of busy tones, sends only OK, CONNECT, RING, NO CARRIER, ERROR, NO DIAL TONE, NO ANSWER, and CONNECT XXXX*.
X3	Enables monitoring of busy tones; send only OK, CONNECT, RING, NO CARRIER, ERROR, NO ANSWER, and CONNECT XXXX*. Blind dialing is enabled.
X4	Enables monitoring of busy tones, sends all messages. (Default).

This command selects which subset of the result messages will be used by the modem to inform the DTE of the results of commands. (*Note: XXXX= represents the connected baud rate)

Zn	Soft Reset and Restore Profile
Z	Reset modem and recall factory configuration.
Z0	Soft reset and restores stored in profile 0.
Z1	Soft reset and restores stored profile 1.

The **Securcomm DL110** modem performs a soft reset and restores (recalls) the configuration profile according to the parameter supplied. If no parameter is specified, zero is assumed.

AT& CONFIGURATION COMMANDS

&Cn	RLSD (DCD) Option
&C0	RLSD remains ON at all times.
&C1	RLSD follows the state of the carrier. (Default)

This command controls the RLSD output in accordance with the parameter supplied.

&Dn	DTR Option
&D0	DTR is ignored and assumed on.
&D1	DTR drop forces modem to command state without disconnecting.
&D2	DTR drop causes the modem to hang up, auto-dial is inhibited. (Default)
&D3	DTR drop forces modem to soft reset.

The command interprets the ON to OFF transition of the DTR signal from the DTE in accord with Parameter supplied.

AT& CONFIGURATION COMMANDS - CONTINUED

&Gn	Select Guard Tone
&G0	Disables guard tone.
&G1	Disables guard tone.
&G2	Selects 1800 Hz guard tone.

&Jn	Telephone Jack Control
&J0	&J0 command. (Default)
&J1	&J1 command.

This command is for compatibility and performs no function except to load the S-Register.

&Pn	Select Pulse Dial Make/Break Ratio
&P0	Selects 39%-61% make/break ratio at 10 pulses per second - USA. (Default)
&P1	Selects 33%-67% make/break ratio at 10 pulses per second - World.

This command determines the make/break ratio used during pulse dialing.

&Qn	Sync/Async Mode
&Q0	Selects data transfer format to character asynchronous (Start/Stop).

This command is for compatibility. The **Securcomm DL110** modem is async mode only

&Rn	RTS/CTS Option
&R0	In sync mode, CTS tracks the state of RTS; the RTS to CTS delay is defined by S26. In async mode, CTS acts according to V.25bis handshake. (Default)
&R1	In sync mode, CTS is always ON (RTS transitions are ignored). In async mode, CTS will only drop if required by flow control.

This option controls CTS. CTS operation is modified if the hardware flow control is selected.

&Sn	DSR Override
&S0	DSR will remain ON at all times. (Default)
&S1	DSR is active after answer tone is detected and inactive after carrier is lost.

This command selects how the modem will control DSR.

&V	Display Current Configuration and Stored Profiles
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Reports the current (active) configuration, stored (user) profiles, and the 4 stored telephone numbers.

&Wn	Store Current Configuration
&W0	Store as profile 0.
&W1	Store as profile 1.

Saves the current configuration and S-Registers in one of the two user profiles, which are kept in non-volatile memory (NVRAM).

AT& CONFIGURATION COMMANDS - CONTINUED

&Yn		Designate a Default Profile
&Y0		Recalls Profile 0 on power up.
&Y1		Recalls Profile 1 on power up.

Selects the user profile that will be used after a reset.

&Zn		Store Telephone Number
&Zn=x		Where n = 0 to 3 and x = dial string.

The modem can store up to four telephone numbers.

%Dn		Enable Smart/Dumb Mode
%D0		Places DL110 in Smart Mode
%D1		Places DL110 in Dumb Mode

This command will only take effect after an AT&W command has been issued.

S-REGISTERS

The following S registers are available in the **Securcomm DownLoader DL110** Programming options and may be examined or changed using the **ATSn** commands defined in section 5.

S-REGISTER INFORMATION TABLE SUMMARY

Register	Function	Range	Units	Saved	Default
S00	Rings to Auto-Answer	0-255	rings	*	0
S01	Ring Cycle Counter	0-255	rings	*	0
S02	ASCII code for Escape Character	0-255	ASCII	*	43
S03	ASCII code for Carriage Return Character.	0-127	ASCII	*	13
S04	ASCII code for Line Feed Character	0-127	ASCII	*	10
S05	ASCII code for Backspace Character	0-255	ASCII	*	8
S06	Wait Time prior to blind dialing	2-255	s	*	2
S07	Wait Time for Carrier or dial tone	2-255	s	*	50
S08	Pause Time for Dial Delay	0-255	s	*	2
S09	Carrier Detect Response time	1-255	0.1s	*	6
S10	Delay from Carrier Loss to hanging up	1-255	0.1s	*	14
S11	Duration and spacing of DTMF Tone			50-255	0.001s * 95
S12	Escape sequence guard time	20-155	0.5s	*	50
S13	Reserved	-	-	-	-
S14	Reserved	-	-	-	-
S15	Reserved	-	-	-	-
S16	Reserved	-	-	-	-
S17	Reserved	-	-	-	-
S18	Reserved	-	-	-	-
S19	Reserved	-	-	-	-
S20	Reserved	-	-	-	-
S21	Reserved	-	-	-	-
S22	Reserved	-	-	-	-
S23	Reserved	-	-	-	-
S24	Reserved	-	-	-	-
S25	DTR change detect time	0-255s or 0.01s	-	-	5
S26	RTS-to-CTS Delay	0-255s or 0.01	-	-	1

*Register value may be stored in either user profile with the &W command.

MESSAGES AND RESULT CODES

The *Securcomm DownLoader DL110* returns the following messages and result codes.

MESSAGES AND RESULT CODES TABLE SUMMARY

NUMBER	PC DISPLAY WORDS	DESCRIPTION
0	OK	Command executed
1	CONNECT	Connection at 0 to 300 bit/s
2	RING	Ring signal detected
3	NO CARRIER	Carrier signal not detected or lost
4	ERROR	Invalid command, error in command line, command line exceeds buffer or invalid checksum.
5	CONNECT 1200	Connection at 1200 bits
6	NO DIALTONE	Dial tone was not detected
7	BUSY	Busy signal returned from remote end after dial.
8	NO ANSWER	No silence detected when dialing a system not providing a dial tone.
10	CONNECT 2400	Connection at 2400 bit/s

CERTIFICATIONS

FCC Part 68

This equipment complies with U.S. Code of Federal Regulations, Title 47, FCC Rules and Regulations Part 68. Located on the equipment are the FCC Registration Number and Ringer Equivalence Number (REN). You must provide this information to the Telephone Company if requested. The Registration Number and REN will be on a label attached to the unit. The FCC requires these numbers be prominently displayed on an outside surface of the equipment. The REN is used to determine the number of devices you may legally connect to your telephone line. In most areas, the sum of the REN of all devices connected to one line must not exceed five (5.0). You should contact your telephone company to determine the maximum REN for your calling area. The telephone company may change technical operations or procedures affecting your equipment. You will be notified of changes in advance to give you ample time to maintain uninterrupted telephone service.

If you experience trouble with this telephone equipment, please contact DC Security Products at (415) 550-0443 for information on obtaining service or repairs. The Telephone Company may ask that you disconnect this equipment from the network until the problem has been resolved. If your equipment continues to disrupt the network, the Telephone Company may temporarily disconnect service. If this occurs you will be informed of your right to file a complaint with the FCC. This equipment may not be used on coin service provided by the Telephone Company. Connection to party lines is subject to state tariffs.

FCC Part 15

This equipment has been tested and complies with the limits for a Class A computing device according to U.S. Code of Federal Regulations, Title 47, FCC Rules and Regulations Part 15. Operation is subject to the following two conditions:

- (1) This device may cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

LIMITED WARRANTY

LIMITED WARRANTY AND LIMITATION OF REMEDIES: DC Security Products warrants that this product is free from defects in material and manufacture at the time of purchase. **If any such defect appears within twelve (12) months from the date of purchase, DC Security Products entire liability is either (a) repair, or (b) replacement of the product with proof of purchase.** This warranty does **NOT** apply to product failure resulting from misuse, abuse, accident, neglect or mishandling, improper adjustment, programming, or maintenance, incorrect environments or wear from ordinary use. **DC SECURITY PRODUCTS SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL LOSS OR DAMAGE (INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF PROFITS, SAVINGS OR DATA) IN ANY WAY RELATED TO THE PRODUCT.**

“Products designed with SECURITY in mind”



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