The Commodore

Bulletin Board System

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The Commodore Bulletin Board System

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NOTE: It is strongly recommended that this documentation be read thoroughly before proceeding, particularly the sections on Modem Notes and Program Notes.

For your convenience, the WordPro files used to generate this document have been included on the BBS diskette (BBS INST1 to BBS INST16). These are Operator instructions only. The files starting with "USER INST" can be given to Users of your BBS.

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BBS Diskette Directory

bulletin.v13	BASIC part of BBS
machine.v7	Machine code part
Info	Message headers
Users	User list or log
User.sort	Sort for above
Programs	BBS Programs Directory
Log	Daily log
MAIN HELP LIST	Main & Bulletin Section
HELP	HELP lists (WordPro files
B-SECTION HELP	followed by SEQ outputs)
.H	
UPDATES BLTN	Sample Bulletins (WordPro
.U	files followed by their
BBS NEWS BLTN	corresponding SEQ outputs)
.B	
GENERAL NEWSBLTN	
.G	
PET NEWS BLTN	
.P	
OTHER BBS NUMBRS	
.O	
MSG EDITOR INST	
.E	
OPENING BLTN	
.OB	
NEW TERM PROGS	
.NT	
USER PORT RS232	
.RS	
TERMINAL INST 1	
TERMINAL INST 2	
.INST	
PROG UP/DOWNLOAD	
.PROG	
BBS INST1	BBS Operator instructions
BBS INST2	(Not given to Users)
BBS INST3	
BBS INST4	
BBS INST5	
BBS INST6	
BBS INST7	
BBS INST8	
BBS INST9	
BBS INST10	
BBS INST11	
BBS INST12	
BBS INST13	
BBS INST14	
BBS INST15	
BBS INST16	

USER INST1	BBS User Instructions
USER INST2	
USER INST3	
USER INST4	
USER INST5	
USER INST6	
USER INST7	
USER INST8	
USER INST9	
USER INST10	
USER INST11	
USER INST12	
USER INST13	
USER INST14	
TERMINAL.I11	BBS Terminal Programs
TERM.I11	
TERMINAL.R12	
TERM.4R12	
TERM.2R12	
copy/all	For your convenience. (this version of COPY ALL will copy REL files from one unit to another. Use BASIC Copy command for copying REL files from drive to drive.)

Purpose

The purpose of the Bulletin Board System is to allow users to call in, using a standard telephone and some suitable BEL-103 modem, and send or receive MESSAGES, PROGRAMS, WORDPRO FILES and SEQ FILES.

Hardware Requirements

In its standard form, the program expects the telephone to be answered by some sort of auto-answering device - the software is not set up to operate any direct connecting modems. This, then, is the required hardware:

- 32K CBM computer (BASIC 2.0 or higher)
- 4040 or 8050 disk drive
- IEEE modem (Commodore 8010, or IEEE Livermore Star)
- Auto-answering device
- User Port connector
- One free phone line

The User Port connector is to allow the program to monitor the auto-anwering device so the disconnection of the user during operation of any function can be detected. You will also require a WordPro or similar program for generating text used by the system.

Running The Program

First place the Bulletin Board System (BBS) diskette into drive 0 and a newed, but blank diskette into drive 1. The diskette in drive 1 (PROGRAMS diskette) will contain programs, WordPro files and/or SEQ files as they are UPLOADED by Users or yourself.

NOTE: Before attempting any program operation, make a BACKUP of the Bulletin Board diskette and put it away! Now allocate 2 more diskettes to be used as backups for the BBS diskette and PROGRAMS diskette; label them appropriately.

There are two files on disk which make up the full Bulletin Board Program, and they are:

- bulletin.vXX
- machine.vXX

BULLETIN is the BASIC part of the program, which does most of the work, while MACHINE is a collection of time-critical routines written in machine code. The characters following these titles will denote the version number.

Load and run the BULLETIN program (SHIFT RUN/STOP will do). Once things are underway, the screen will clear and show:

Remote or Local?

Respond with R <RETURN> if you are setting up the system to operate from the modem, or L <RETURN> if you would like KEYBOARD operation of the program. You will now see:

Enter Time (HHMMSS)? [6 digits]

The 6 digits represent whatever the clock is currently set to, so if correct, simply push <RETURN> and it will be entered. If the shown time is incorrect, enter the time and push <RETURN>. (Note: 4:33 PM would be entered as 163300) You will now see:

Current Date = MM/DD/YY
Next Date = MM/DD/YY

The Current Date and Next Date are stored in two string variables on line 14 of the program. They are printed here merely for verification and will require changing daily. The Current Date will become the Next Date when the clock passes 235959 (See Program Notes and EDIT Command for more details).

The BBS has several options. One is Password Required Sign-On.

Temporary Password? *none*

The prompt for 'Temporary Password' will show only if you have set up your BBS so that a password is required of the User to "get on" your system. This allows you to have 2 passwords. The Temporary Password might be given to an anticipated caller who isn't supposed to know the System Password (more on System Password in 'Program Notes'). Type in the Temporary Password of your choice or hit RETURN and the Temporary Password will actually be entered as "*none*".

Now you will be asked for:

Number of Uses? 2

This specifies the number of uses for the Temporary Password. In this case, if you hit RETURN, the Temporary Password "*none*" would allow a User to get on your BBS twice before "*none*" would no longer be accepted. Finally you will be asked:

Clear Log? n

If you would like the system LOG cleared (which should be done at a predetermined time each day), type Y <RETURN>, but if the LOG is to be left alone, just push <RETURN>.

While the program sets up some reference tables, there will be a short delay. Then, you may or may not see some diagnostics printed, but ignore this. If you have chosen REMOTE mode, that is all there is to it. Your BBS is now waiting for a call! You can break the program by simply pushing the STOP key.

Local Mode

In LOCAL mode, you use the system exactly as a REMOTE caller would, except there are a few things you don't have to do.

You MUST push <RETURN> to get the system to respond, but when it prompts you for your first name, simply enter SYSOP and you will immediately be dropped to the "Command > " line.

Also, you will not have to enter either the Program, or File Access Codes to enter the functions requiring them (See Program Notes). Expert Mode is also set automatically for "SYSOP"

UPLOADING in Local Mode

UPLOADING a program in LOCAL mode is not same as in REMOTE mode. First, find out how many BLOCKS the program to be UPLOADED takes up on disk, and remember this figure.

Now type SAVE <RETURN> and follow the usual sequence of events to SAVE a program. The difference is, that instead of telling you it is waiting for a START Signal, the system will ask:

```
Program Name?
>
```

Enter the name of the program as you would like it to appear in the Programs directory (displayed by the LIST command). This will be converted to all CAPITALS. The system will now ask:

```
Security Code or <RETURN>
for General Distribution
>
```

Hitting RETURN will make this file available to any User on the BBS (eg. the TERMINAL. & TERM. programs should be available to anyone). You can enter a Security Code of your choice (6 chars max.), or you can enter a "!" (exclamation mark) followed by a Users first and last name. When the BBS sees the "!", it will search the User Log to find the name. The User Code of that person will then be used as the Security Code for this file. In this manner, files can be left for specific people without having to relay the Security Code to them by phone or private message. The BBS will now ask:

```
Deletion Code
>
```

Hit RETURN and no Deletion Code will be added. This file can then be deleted with the DP command by any User. Adding a Deletion Code (6 chars max) will allow only certain personnel to delete this file; those that know either the File Access Code, System Access Code or Deletion Code of this file. Now the system will ask:

Name of Program on Your Disk?
>

Type in the name of the file as it appears on the disk it now resides (which should NOT be in the disk drive yet), observing capitals where necessary. The system will then ask for:

Type >

Hit P for PROGRAM, W for WordPro File or S for SEQ file.

Number of Blocks? >

Enter that number you remembered at first. The disk drive will now run, entering all of this data into a REL file titled "Programs" on drive 1 or drive 0, depending on which drive you selected for Programs directory (see Program Notes section). The screen will now show:

Remove the BBS disk from drive 0 and
put in your disk containing the new
program, then hit <RETURN>

Do as it says. Your program will now be copied onto the PROGRAMS diskette using a disk COPY command. Once the operation has completed, the screen will display:

Replace BBS disk in drive 0

Command >

DOWNLOADING in Local Mode

Put quite simply, THERE IS NO SUCH THING. Any attempt to use the LOAD command in local mode will produce the message:

Invalid Command in Local Mode

Since the programs exist on your BBS PROGRAMS Diskette as PROGRAMS, if you want to put one on another disk, simply use the COPY command in BASIC. This also applies to WordPro and SEQ files.

Printer Operation

During Local Mode, it is possible to activate any ASCII printer (assumed to be device 4) with two simple commands. By issuing the command PON, everything going to your screen will also go to your printer, until such time as a POFF command is given.

System Operator Commands

System Operator (SYSOP) Commands are commands available only to authorized personnel and thus are not shown in the 'HELP' list. These can be used in Local mode or from a Remote location. The commands are:

EDIT
D (for Delete)

If you use these commands Remotely, you will be asked for a 'File Access Code?'. Entering an incorrect code will disallow access to these commands. The File Access Code is stored in a string right at the beginning of the 'bulletin' program (See Program Notes for details).

In Local mode the File Access Code isn't required.

EDIT

The system will prompt you with:

Edit Date, Users or Messages?

Enter the first letter (D, U or M) and hit <RETURN>.

Edit Date

First you will be allowed to edit the value of the Current Date, then the Next Date followed by the Time. Include the slashes (/) that delimit month from day, etc or hit RETURN and the values will remain unchanged.

Edit Users

The BBS will ask you for the Users' name. Enter first name and last name separated by a space. When the name is found in the User Log, the system will display the name, city and User Code followed by his/her initial sign-on time & date. If not found, you will be informed and prompted again for Users Name.

Name >
City >
Code >

When the name is found, you can now edit. Hitting RETURN will leave the data unchanged.

Edit Messages

Message # ? >

Enter the message number. The BBS will display the message header followed by the subject, for example:

Display	Meaning
FROM JOE USER TO SYSOP	- From/To
POSTED 08/21/81 AT 0402h	- Posting Time
KDMMDS	- Deletion Code
Some Important Announcement	- Subject
Non-Private	- Protection Status

You will now be able to make changes to 6 pieces of the message header: (Message text cannot be editted)

Subject >

Here you can change the message subject from 'Some Important Announcement' to whatever you like (maximum 32 characters). The BBS will NOT convert this to all capitals.

From/To >

If you change the From/To header, type it in exactly as you want it to appear, for example:

from joe user to all

Here, the BBS WILL change everything to capitals. Again, hitting RETURN will leave the header unchanged.

D Code >

Allows you to enter a different deletion code (this is rarely ever changed, but you could use it stop people deleting important messages if you thought they might know the code).

Date >

Allows the DATE of a message to be changed. Might be necessary if you had set up the wrong date when running the program. Format: MM/DD/YY

Time >

Same use as Date, can be used if you set the clock up wrong (you might make the time 12 hours out by accident). Format: HHMM

Private >

If you would like to protect, or unprotect a message, simply answer yes or no to this question.

D - The Delete Command

The Delete command allows you to remove programs (no different from the DP command), Users, BULK messages, or LOG.

First you will be prompted with:

Delete:
Log, Users, Messages, or Programs

Again, enter the first letter followed by <RETURN>

Delete Log

Just type L <RETURN> and the LOG will be completely cleared out.

Delete Messages

What is meant by BULK MESSAGES is, when you enter the command, you will be prompted with:

Range of Messages to
Delete (same as BASIC LIST)>

As it says, range is specified like LIST. For example:

22	Only msg 22
21-25	Msgs 21 to 25 inclusive
40-	Msg 40 onward
-15	Msg 1 to 15 inclusive

Unlike the DM command, where messages are simply tagged for deletion, they are deleted on the spot!

Delete Users

When deleting USERS, you will be given the opportunity to specify the Users name, or 'S' to scan. If S is chosen, the names on the list will be shown, starting with the top most name in the User Relative File. To continue to the next name, type <RETURN>; to ABORT, type A <RETURN>; and to delete the name shown, type D <RETURN>.

Delete Programs

Same as the DP command except you won't be asked for any Deletion Codes.

Program Notes

The bulletin program contains certain strings that you may wish to change before 'unleashing' your system. All of this is in lines 11 to 17 of the BULLETIN program.

Password System

It may be desirable to require an initial password to be entered before allowing access to your BBS. In a public domain environment, you might choose to ignore this. In line 11 is a variable AS$ which contains the System Password and has been initialized to "PASSWORD". In line 13 is a variable PW. If you want an initial password, change PW=0 to PW=1 and the User will be required to match the System Password in order to sign-on. Make AS$ all CAPITALS.

The variable 'TR' in line 12 is the System Password Re-Try count. It currently allows 2 tries at entering the password correctly.

If you choose to enable the System Password, you will also be askd for a Temporary Password to be entered when the system is started in REMOTE mode. This allows for a second password that can be given to someone whom you anticipate using your BBS but should not know the System Password. See 'Running The Program'.

Programs Directory

The BBS maintains its own Programs Directory for files available for downloading. Since the programs (WP files & SEQs) themselves are stored on drive 1, you will also want to keep the directory file on drive 1. Line 13 of the bulletin program contains PD=1. You must also transfer the file titled "Programs" from the BBS diskette onto your programs diskette with the BASIC COPY command. (ie. copy "Programs",d0 to "*",d1)

System Access Codes

The Program Access Code (PC$ in line 11) is simply to ensure that Users have the correct Terminal programs for proper Down-Loading and Up-Loading. This has been initialized to "EEZOO" and has rapidly become accepted as the standard code by Users of other systems using this same software. Changing this would result in confusion amoungst the entire User community, so avoid alteration here.

The File Access Code that is required for REMOTE operation of the EDIT and D commands is stored in FC$, line 11. This has been initialized to "YOUR ACCESS CODE". Again, make it all CAPITALS.

The string variable SO$ in line 11 contains the Operator Code. This allows you to sign on to your BBS (from a REMOTE location) as "SYSOP". Of course, in LOCAL mode you won't be asked to give this code. Once signed on, EXPert mode is set and no other access codes will be required. Also, the protection is "lifted" from all messages and programs. This code can be very dangerous in the hands of unauthorized personnel, so DON'T GIVE IT OUT! You might also consider changing it occasionally.

System Display Strings (at sign-on)

You may also want to change the name of your particular BBS. Line 15 contains a string variable SN$ which is used for YOUR system's name.

The string variable OP$ in line 12 contains the name of the system operator or SYSOP. This is displayed to Users at sign-on and added to the end of messages entered by "SYSOP". Change this to your name.

When the system greets a User, the operating hours are displayed using H1$ and H2$ in lines 16 and 17. Change these to suit your hours of operation.

The BBS will then display an "Opening Bulletin". This SEQ file is created like other Bulletin Section files but must be labelled ".OB". (See 'Creating Bulletins').

When Users sign-on for their first time, the BBS will ask for their City to be entered into the User Log. Should you want more info here, change CY$ (line 12) to, for example, "Your Company, City" or "Your City, Prov./State". The Users' response here should be less than 25 characters, so don't ask for too much.

Protected Message System

For certain applications of this Bulletin Board System, you may want to allow messages to be protected by their senders. If this is the case, set the variable PR (line 13) equal to 1.

After a User enters the name of the person to which the message is being sent, the prompt:

Private Message? -

will appear, unless the message has been addressed with the prefix "ALL". The response here will be simply Y or N. Once a message is protected, only certain personnel will be allowed access to it. They include: the sender, the recipient, or anyone who has previously entered either the File Access Code or the Operator Code (ie SYSOP).

Message Recipient Exceptions

When the User enters to whom a message is addressed, he must enter either a valid User's Name, ALL (followed by any string), SYSOP, or an "Exception Name". The exception name can be altered to anything you like. For instance, on the PSI-WordPro system (original) the name is "SUGGESTION BOX", while on InterCOMM, the name is "SALES". Exception Name is set with OT$ in line 13.

Shortening LOGs

Although it is quite easy to simply clear the LOG from day to day, you may want only to remove names that are a certain number of hours old. In other words, trimming the LOG from the top.

In Local Mode, enter the LOG function and let it run down to the name which you would now like to appear at the TOP of the LOG (you can use the S to STOP, S to START AGAIN key sequence to nudge your way to the exact place), then hit L. The disk drive will start, and the new LOG will be displayed once complete.

NOTE: This function can be used in REMOTE mode, but the File Access Code must be given.

Terminal Program Availability

The Terminal programs (TERMINAL.Ixx & Rxx, TERM.Ixx & Rxx) should always be made available for downloading. The 'Programs' file already contains a list of these programs, but first they must be copied onto your BBS Programs diskette in drive 1. (see 'Terminal Program Notes').

Direct SYSOP Communication

If a remote caller is currently using your BBS and you want to break in for some direct keyboard communication, hit the "cursor-down" key. Both your screen and the Users' screen will display:

Direct SYSOP Communication...

Now you can "talk" using your keyboards. Proper protocal states that you type 2 RETURNS to indicate 'finished typing, waiting for response'. One CR indicates more to come.

When finished, hit "cursor-right" and your screen will prompt for:

Return String >

The Return String you type here will be used as the response to the question that the User was looking at when you broke in on him. Hit <RETURN> and the system will enter your string as though the user entered it himself. The string you enter will be echoed on the users screen, but should you not desire that he sees what you entered, put an "arrow-up" in front of the string. Simply hitting <RETURN> without a Return String will return the User back to "Command >".

Sysop Command Entering

The SYSOP may enter commands for a User without having to go through Direct SYSOP Communication. At any input point, simply hit <SHIFT> "cursor-down" and the screen will prompt with "Return String > ". Handle as above.

Graphics or Business Keyboard?

On line 15 of the bulletin program there is a POKE that modifies the machine code that detects the cursor-down key for entering Direct SYSOP Communication. If you are using a graphics keyboard PET/CBM for your BBS, this POKE should end with ",66"; for business keyboards ",17".

The Bulletin Section

The Bulletin Section is your main information bank! Information like: Debates or regular columns; reviews of movies, TV, restaurants, concerts; announcements, news and advertisements; product information such as specs, cost and availability; and the list goes on! The number of bulletins is only limited by the capacity of your disk.

As bulletin information is obtained, it should be classified. If bulletins exist that contain subject material that is related to new material, include it here rather than making a new bulletin. Additions should be dated and inserted at the beginning of the file.

As SYSOP, you will be responsible for updating bulletin information and discarding obsolete material. An UPDATES bulletin should also be maintained so Users can determine whether they have already read other bulletins (or parts thereof).

The 'B' command is used to enter the Bulletin Section where Users can only read bulletins (no editting or deleting allowed). The prompt "Sub Command >" is used here. Users can hit <RETURN> to exit back to "Command >" or simply enter the "mnemonic titles" of bulletins to display them (more on mnemonic titles later).

Creating Bulletins

Bulletins are stored on disk as sequencial files. How you create these files is up to you, but since you obviously have a PET and DISK DRIVE, you almost certainly have WordPro 3 or better.

WordPro can be used to create the bulletins in the following way: First, set up your margins to suit 40 column Users:

/lml:rm38:jul (/ = Control + "/" [the checkmark])

Then proceed to write your bulletin. Blank lines CANNOT be put in with LN commands or strait <RETURN>s, you must have a line containing a FORCED SPACE (<SHIFT> <SPACE>) followed by a <RETURN>.

The BBS will stop and ask "Continue?" anytime it runs into an "@" symbol at the first character position of a line in a bulletin. This is useful in long bulletins where the text might scroll off the screen before the User has a chance to read it. The "@" symbols will be ignored if the User has previously entered the CONT command for continuous print. This is convenient for Users dumping Bulletin Section text to a disk file. Subsequent CONT commands toggle this function on and off.

If you have the left margin indented, don't forget to use an MA (margin release) to position the "@" correctly. For example:

```
/lm5
1) To halt scrolling, include an occasional "@" symbol.
-                                   ;forced space for blank line
2) Always put an MA in for an "@" symbol if LM is indended.
/ma4;@
-                                   ;forced space for blank line
3) And that is all there is to it.
```

Now this text is used to generate an SEQ file. With the OUTPUT function of WordPro, use D for output to disk and Cbm as the output format. Then you must select a filename which will be the "mnemonic title" of this bulletin.

Bulletin Mnemonic Titles

Bulletin filenames must appear on the disk AS THE USER WILL TYPE THEM IN. Inotherwords, if you have directed the User to type "WHY" in the Bulletin Section, the file must be called ".WHY" on disk. Note the period at the beginning, and the use of ALL CAPITALS! Adding the period to these filenames stops the User from being able to read other SEQ files on your disk. (The BBS adds a "." to the User's response and uses this string as the filename) Keep a note of the disk output filename in the WordPro file that produced it. (See Bulletin Section WordPro files that were included on system disk) Also, try to keep these "mnemonic titles" short. These will be listed in a HELP file along with short explanations.

Bulletin Section HELP File

When a User issues a 'B' command to enter the Bulletin Section, the BBS loads the Bulletin Section HELP File (NOT the Main HELP file) into message memory space. The BBS expects this SEQ file to be titled ".H" and it's loaded into memory to save time for Users. Subsequent 'H' sub-commands need only display the contents of message memory, rather than make another call to disk. But not all of this file is displayed at any one time. Although this file is generated much like other bulletins, there is a special format for ".H" that must be observed.

The first three lines of text in this file are reserved for the Bulletin Section header and is only displayed by the 'B' command. The fourth line must have an "@" symbol in column 1. This "@" symbol acts as a delimiter. The next line(s) is used for the mnemonic titles of all of your bulletins. On the line following these, another "@" symbol in column 1 will act as the second delimiter. These are also displayed on the 'B' command.

Next comes the Help List*. Here the mnemonic titles can be listed beside a short description of their content. Subsequent 'H' sub-commands will display this part of the file only.

* Since the ".H" file is loaded into message memory, it can be no longer than the maximum size of a message (about 40 lines). Use the ".H" file for a main categories listing. Then generate bulletins (or "sub help" files) containing the mnemonic titles of other bulletins in this category. For example: if you have a TV Reviews section, list "TV" in the main HELP file. The file ".TV" will display a list of the shows. You can cascade help files if you like, for instance, ".TV" might contain TV categories (Comedies, Dramas, etc.). Lastly, if you have cascading bulletins like these, include a "backward link" at the end of each bulletin. This backward link is simply the sub-command that will display the previous bulletin. (eg. at the end of a TV show review, include "Sub Section of: TV") This way Users can walk back through the sub help files.

Here is a list of some sample bulletins that have been included on the BBS disk. Examine these with WordPro and the BBS in Local Mode. You might want to alter them before putting your system up.

```
H    - Reprint this list
U    - Time of Updates
B    - BBS News
G    - General News
P    - PET News
O    - Other BBS Numbers
E    - Message Editor Instructions
OB   - Opening Bulletin
NT   - NEW TERMINAL PROGRAMS
RS   - User Port to RS232 Cable
INST - Terminal Instructions
PROG - Describe Program Download
```

Device Number of Bulletin Section

If you have a lot of bulletin-type information, you have the option of dedicating an entire disk unit (both drives) for the Bulletin Section. Just change the variable BD (line 13) to the device number of the other disk unit. Note that the Bulletin Section Help File (".H") AND the Opening Bulletin (".OB") must reside on the same disk unit, in drive 0.

Summary of SETUP Variables

Just to make life a little easier, here is a consolidated list of all the SETUP variables that can be changed to taper your BBS to suit your needs:

```
FC$ = File Access Code (ALL CAPS)
PC$ = Program Access Code (ALL CAPS)
AS$ = System Password (ALL CAPS)
SO$ = SYSOP Code (ALL CAPS)
CY$ = City Prompt for new users (Upper/Lower Case)
OP$ = Name of SYSOP (Upper/Lower Case)
OT$ = Other Exception Name (ALL CAPS)
SN$ = System Name (Upper/Lower Case)
H1$ = First Operating Hours
H2$ = Second Operating Hours
DT$ = Today's Date (MM/DD/YY)
ND$ = Tommorow's Date (MM/DD/YY)
TR  = Number of tries at System Password
PR  = Protected Messages (0=NO, 1=YES)
PW  = Password? (0=NO, 1=YES)
BD  = Bulletin Device Number
PD  = Programs Directory Drive #
```

Other alterations:

```
15 ...:POKE32681,NN (Business Keyboard, NN=17)
                    (Graphics Keyboard, NN=66)
```

Modem Notes

If you are using the Commodore 8010/Livermore Star with the software driven telephone answerer, here are a couple of tips.

Before tampering with the modem, turn power OFF.

Set the modem at FD (Full Duplex) and AN (Answer). The Answer Tone of your particular modem may not be loud enough for optimum operation. Fortunately, a minor modification will allow you to adjust the volume. On the 'piggy-back' printed circuit board inside the modem there is a white nylon connector that goes to the modem speaker. Just to the right of this connector is a 750 ohm resistor (purple, green, brown). To adjust tone volume, solder a 1K potentiometer in parallel with this resistor. (See Diagram 2, note 'a').

The volume should be adjusted to maximum but the tone should remain smooth. Over adjusting will cause the tone to oscillate and hamper proper operation. A very ragged, dirty sound will indicate oscillation.

No doubt you will be using a standard Bell equipment desk-top phone and handset. This handset usually contains a carbon type microphone. So far there have been no problems with these microphones being constantly exposed to the modems answer tone. Potentially, this can cause the carbon to compact and reduce the quality of the sound. Occasionally you might tap the mouthpiece lightly to 'loosen up' the element.

Another suggestion is to make sure the phone is as new as possible, since old carbon microphones do tend to become terminally pacted. If you can't afford an entire new telephone, at least check the date stamped on the microphone and replace if necessary.

A more effective solution is to disable the modem speaker until a call is connected. If you have an extra pole on the relay used for the answering device, you might use this to control the modem speaker; use one of the wires leading from the white nylon connector mentioned in an earlier paragragh (See Diagram 2).

Also read all notes in Diagrams 1 & 2 before proceeding with construction of this section.

Terminal Program Notes

Included on the BBS system diskette are two terminal programs for use with Commodore computers and this BBS software. Although any ASCII terminal can access the system, only these two programs are capable of up/downloading files to/from this BBS.

```
TERMINAL.Ixx
TERM.Ixx
TERMINAL.Rxx
TERM.4Rxx
TERM.2Rxx
```

The TERMINAL. files contain the BASIC part of the programs. "xx" represents the version number. The TERM. files are some machine language subroutines that are loaded by the corresponding TERMINAL. programs.

TERMINAL.I is the for use with IEEE modems (Commodore 8010, Livermore Star). TERM.I is the corresponding machine code and works on BASIC 2.0 or 4.0.

TERMINAL.R is for use with RS232 modems (Novation Cat). TERM.4R and TERM.2R are the corresponding machine language files for BASIC 4.0 or BASIC 2.0, respectively.

Before you can use either program, the TERM. files must be appropriately RENAMED. When run, TERMINAL.Ixx will attempt to load "term.ieee". Likewise, TERMINAL.Rxx will determine which BASIC you have and attempt to load "term.4rs232" or "term.2rs232". Once these files have been copied onto another diskette, use the RENAME command to change the filenames:

```
rename "TERM.Ixx" to "term.ieee", d1
rename "TERM.4Rxx" to "term.4rs232", d1
rename "TERM.2Rxx" to "term.2rs232", d1
```

This was done deliberately to avoid any mismatch of versions of TERMINAL. & TERM. files.

These filenames should NOT be changed on the Bulletin Board System itself, only on diskettes used for accessing the BBS. The Programs directory of the BBS should already have the latest versions of these files listed. Before putting your BBS 'up', these programs should be copied onto the BBS Programs diskette (drive 1) along with the directory file.

```
copy "Programs",d0 to "*",d1
copy "TERM*",d0 to "*",d1
```

This Terminal software is available free of charge. From time to time new versions of the programs will be released. When you receive them, the old versions should be replaced by the new.

Program Features

These Terminal programs have several features that make it ideal for communicating with other computer systems as well as the BBS.

On running the TERMINAL. program, a menu will be displayed. Press the number of the desired option. Option 1 will always be "Terminal Mode". This engages the modem and gets you started. At any time in Terminal Mode you can use the 'HOME' key to display the menu. This does not mean you'll be disconnected; press 1 again for Terminal Mode and continue where you left off.

Control Key

The 'RVS' has been implemented as a 'Control Key'. One difference from a terminal control key is that it must be released before typing the Control Character.

Dump to Disk

If you wish to dump text to a disk file, select the Open Disk File option. The Terminal program will ask you for a filename which will be opened on drive 1 unless otherwise specified. Once back to Terminal Mode, hitting "CURSOR-DOWN" engages the disk log; "CURSOR-UP" halts disk log; and hitting "HOME" closes the files and returns the menu.

Print Disk File

Supply the name of an SEQ file and the contents will be sent to device #4.

Change Operating Modes

Here you can turn Line Feeds on or off, and change the parity of transmission.

Receive/Transmit Programs

As mentioned earlier, to send or receive programs, WordPro files or SEQ files to or from the BBS, you'll need to use one of these options. After entering the LOAD or SAVE command, you'll be asked for some other information such as Access Code, Security Code etc. The BBS will finally display:

```
Waiting For START Signal!
(or 'A' for ABORT)
```

The START signal is the sequence of "HOME" followed by the desired option ie. Transmit or Receive. The Terminal program will ask for a filename and the transfer begins. When finished, you'll be returned to the BBS for your next action.

BBS Feedback

New BBS information (program updates, documentation updates, etc.) can be relayed to you via your BBS. Once you're set up, please fill out the following questionaire. Don't tear it out of your manual, make a photocopy first. Send us another if you change your number or password, or if you have suggestions for new features. We will be glad to hear from you!

Commodore Canada
Bulletin Board System
3370 Pharmacy Av.
Agincourt, Ontario
M1W 2K4

Or complete this WordPro file (BBS INST16) and send it directly to the Commodore Canada InterCOMM BBS at 416 499 4228. Confidentially, our password is "FLAGSHIP". Also, see the bulletin that contains other BBS numbers.

SYSOP's Name : _____

Address : _____

_____

_____

BBS Name : _____

Phone Number : _____

Operating Hours : _____

Password : _____ (if one)

Public System __ or Business __
Can we publish your Number and Password? ____
Expected # of Users : _____
Expected Users/Day? : ____ /Week? ____ /Month? ____
User Base Radius or Area Serviced : _____

My BBS is mainly for: (check 1 or more)

- A General Public Message Service __
- Bulletin/Information System __
- Program Distribution __
- Data Collection __
- Inter-Company Communication __
- Company/Client Communication __

Other_____

Suggestions/Comments: _____

_____

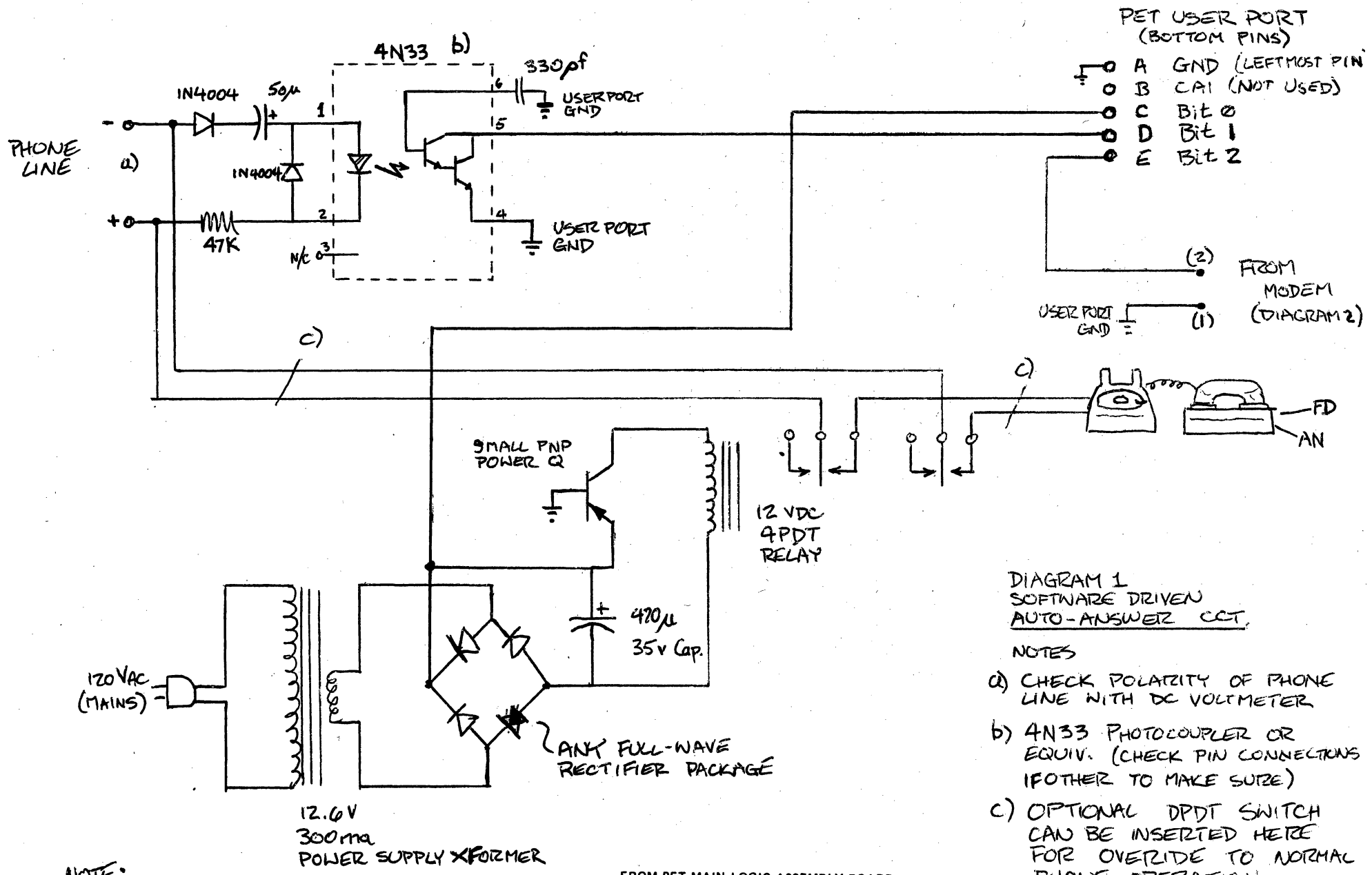

DIAGRAM 1
SOFTWARE DRIVEN
AUTO-ANSWER CCT.

NOTES

a) CHECK POLARITY OF PHONE LINE WITH DC VOLTMETER

b) 4N33 PHOTOCOUPLER OR EQUIV. (CHECK PIN CONNECTIONS IF OTHER TO MAKE SUBE)

c) OPTIONAL DPDT SWITCH CAN BE INSERTED HERE FOR OVERIDE TO NORMAL PHONE OPERATION.
OPEN - BBS
CLOSED - TELEPHONE

- SUPPORT A-A CCT ASSEMBLY SO AS NOT TO PUT UNDUE BENDING STRESS ON USER PORT

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NOTE:

USE BELL MODULAR JACKS & RECPTACLES WHEREVER POSSIBLE. ie. PLUG A-A CCT INTO WALL, PLUG PHONE INTO A-A CCT. AVAILABLE AT ANY RADIO SHACK.

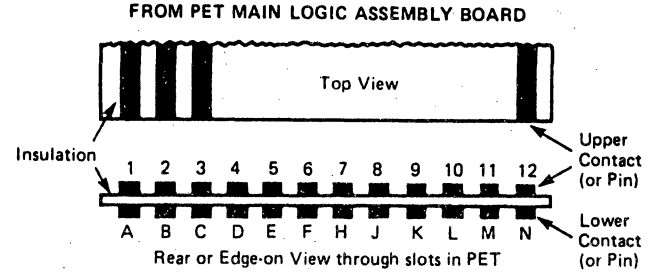
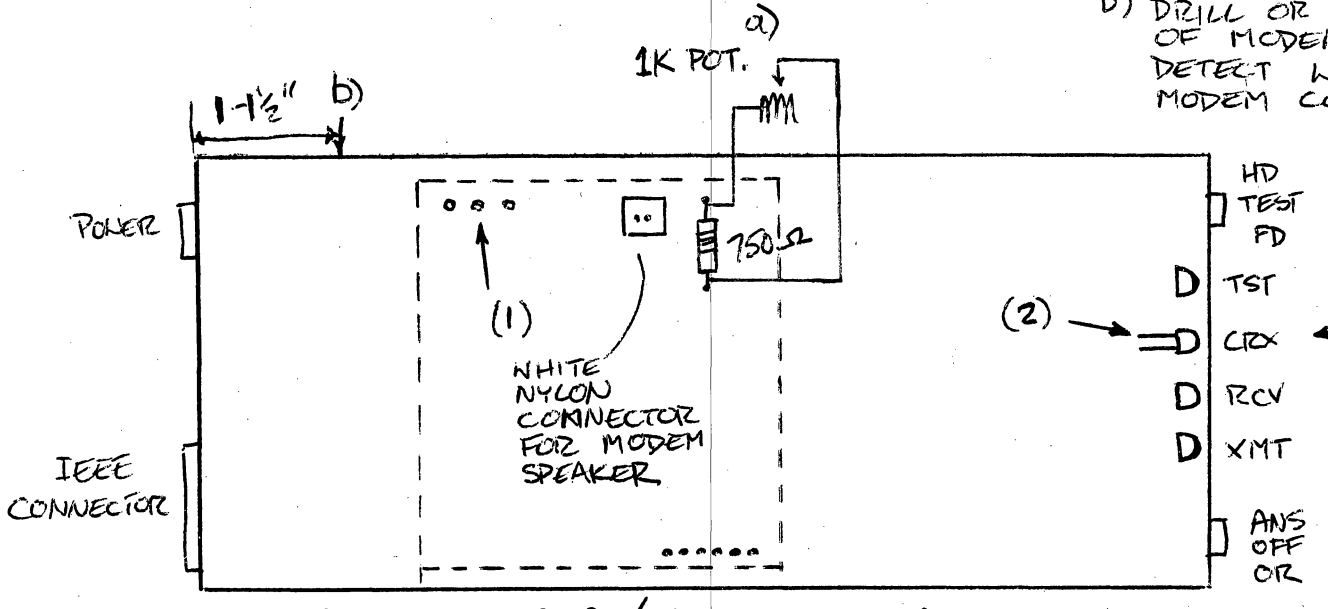


DIAGRAM 2
8010/STAR CARRIER
DETECT CONNECTIONS
& ANSWER TONE LEVEL ADJUST



COMMODORE 8010 / LIVERMORE STAR MODEM

NOTES

a) POTENTIOMETER IS EASILY MOUNTED ON MODEM COVER. USE APPROPRIATE SIZE DRILL OR HOT SOLDER IRON TO MELT HOLE.

b) DRILL OR MELT HOLE IN SIDE OF MODEM FOR CARRIER DETECT WIRE. MAKE SURE MODEM COVER OR RECEIVER CUPS DO NOT INTERFERE WITH HOLE. TIE A RESTRAINING KNOT IN WIRE INSIDE MODEM. ALSO,

INSERT A 2 PRONG CONNECTOR IN WIRE. THIS WAY THE MODEM CAN BE DISCONNECTED FROM AUTO-ANSWER CCT.

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