

**Whozz Calling?
Caller ID/ Call
Accounting Unit**



**Scout Series
Remote Call
Accounting Unit**



User Interface Guide
*with Memory Option
and Scout Series Supplements*

**Whozz Calling? 4 & 8 Line
Caller ID/Call Accounting Units**

User Interface Guide

including

**Whozz Calling? 4 & 8 Line
Caller ID/Call Accounting Units *with Memory***

Supplement

and including

**Scout 4 & 8 Line
Remote Call Accounting Units**

Supplement

Whozz Calling? Revision 3.0 (11/18/03)
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INTRODUCTION

The Whozz Calling? unit captures Caller ID data and Touch Tone (DTMF) signals from as many as four telephone lines and sends them to a RS232 serial interface. The unit does not pick-up, go off-hook, or answer the telephone line. It does not affect the operation of any other devices connected to the telephone line.

The unit can be set to deliver only inbound Caller ID, ignoring all outbound dialed numbers. Or, both inbound and outbound data can be sent for complete call accounting applications. The data streams can be sent just as the call begins, just after the call ends, or both at the beginning and the end of the call. The unit can send data in two different formats of which each has two variations. Incoming calls can be blocked from passing through to the output jacks. This can be accomplished by dynamic control from the application software or by pre-loading blocked phone numbers into the unit's memory. First ring suppression to the output jack also can be performed. Setting this option prevents office employees from answering the telephone too quickly and thus inhibiting the Caller ID signal from being delivered. Finally, the unit can be set to deliver all detail information occurring on each telephone line. This includes every occurrence of Ring Signal, Off Hook, On Hook, and Hook Flash.

The Whozz Calling? unit uses setup toggles to determine how the unit will operate. The toggles are either upper or lower case and are stored in non-volatile memory. Operating commands are used to list the setup parameters, input phone numbers in memory, and reset the system. The Send Data commands are used to set line numbers, internal clock, and phone numbers for internal blocking.

The manual is designed for the individual that prefers to quickly get the unit running and start experimenting immediately. The quick start procedure section is followed by a brief discussion of the setup toggles, commands, and data formats. Later, the manual gives a detailed explanation of all setup toggles, commands, and data formats. Then a discussion on Private and Out-Of-Area callers, Baud rate selection, and connecting units together, is provided.

QUICK START PROCEDURE:

Refer to Fig. 1 on when connecting unit.

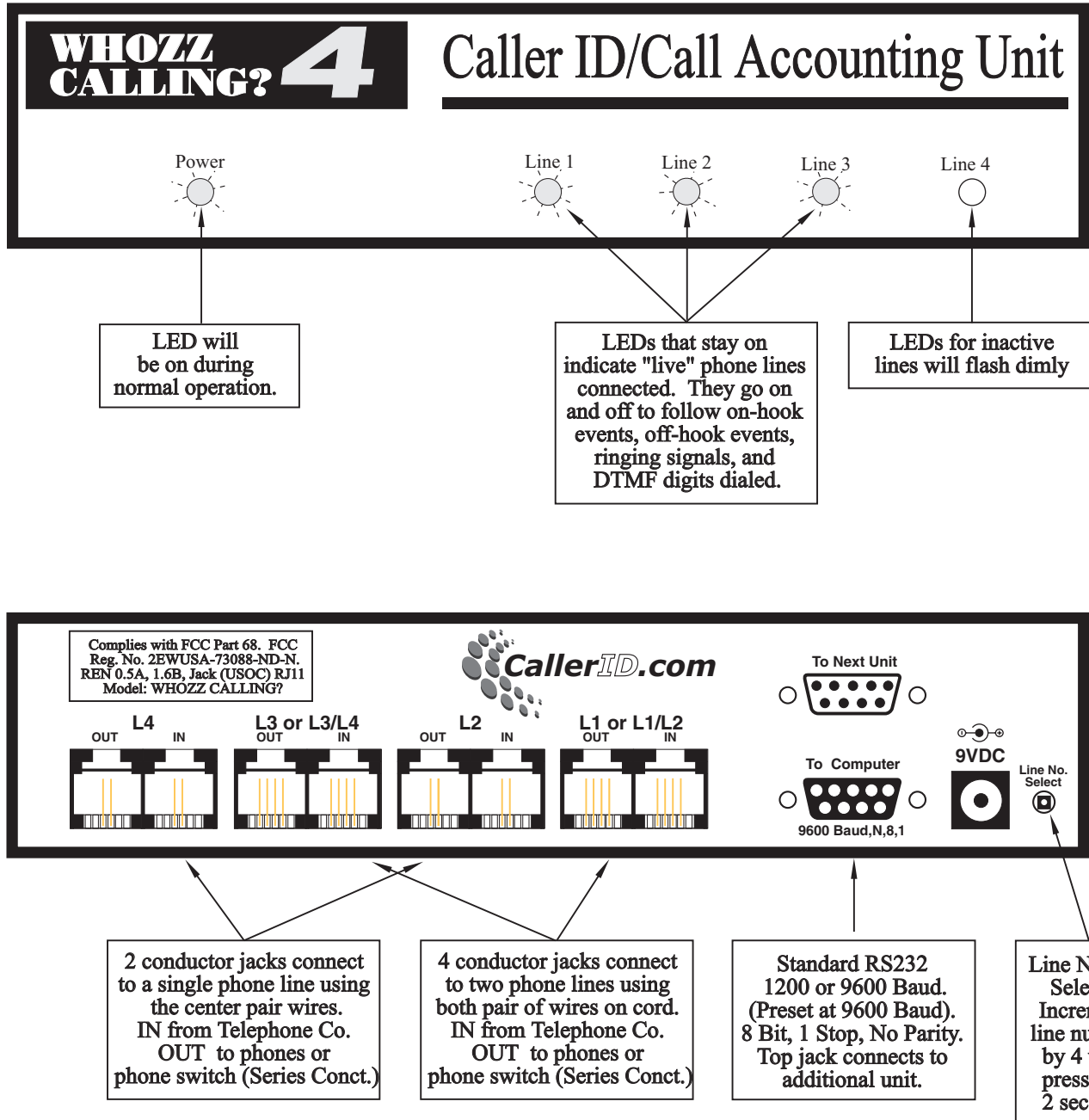
1. Plug in the power supply and make sure the red Power LED is on.
2. Connect the supplied 9 pin cable to the female serial connector on unit marked "To Computer".
3. Connect the same cable to an available serial port on the computer.
4. Plug in up to four phone lines into the input jacks marked "IN" on the unit.
5. Use any terminal emulation program or modem software set to terminal mode.
6. Set communication parameters to 9600 Baud, 8 Bit, 1 Stop, No Parity.

When turned on for the first time, the unit is set to communicate at 9600 Baud, 8 Bit, 1 Stop, No Parity. All setup toggles are set to their upper case values, but they can be changed later. The order of how the toggles are input or displayed is not important. They are stored in non-volatile memory so that if the unit loses power, the toggles will remain set. To display the toggle settings at any time use the "V" command. On start-up, the "V" command will display:

Vx.x ECXUDASOBKT L=01-04 00/00 00:00:00

Where **Vx.x** is the version number of the firmware, **ECXUDASOBKT** are the setup toggles, **L=01-04** is the line numbers of the unit, **00/00** is the date, and **00:00:00** is the time of the internal time clock (in HH:MM:SS).

Fig. 1 Front and Back Views of Whozz Calling? 4 Line Model



For simple Caller ID applications, we suggest the following toggle setup:

ECXUDaSOBKT

The combination of a lower case "a" and an upper case "S" instructs the unit to send call information only at the start of each call. The upper case "O" instructs the unit to send call information only on inbound calls. This combination of toggles gives the simplest configuration for Caller ID only applications. The unit can be configured to support various applications such as Call Accounting, Integrated Voice Response (IVR) applications, Modem/Telephone Security, and Telephony Diagnostics.

All toggles can be changed by simply typing the new toggle. The unit is designed to accept one toggle at a time. If a software application sends an initialization string of toggles to the unit, a short pause of at least 50 msec should be inserted between each toggle so it has enough time to write it to memory.

OVERVIEW OF TOGGLES, COMMANDS, AND FORMATS

Setup Toggles

This is a quick listing of the setup toggles. A complete explanation of each toggle begins on page 6.

E	Echo OFF
e	Echo ON
C	\$ sign <u>not</u> sent as leading character in data stream & dashes inserted in phone number.
c	\$ sign is sent as leading character in data stream & dashes removed in phone number.
X	Comprehensive format with duration and checksum.
x[†]	Limited format denoting only inbound and outbound.
U	Internal blocking/passing OFF.
u^{††}	Internal blocking/passing ON. (Block or pass is determined by "K,k" toggle).
K	Pass calls until notified by Internal Memory routine ("u") or by W command.
k	Block calls until notified by Internal Memory routine ("u") or by W command.
A	Data sent BEFORE and AFTER call.
a	Data sent as defined by "S,s" toggle.
S	Data sent at the Start of call only. (If "a" set above).
s	Data sent at the End of call only. (If "a" set above).
B	Block first ring to output jack.
b	Block first ring set to OFF.
D	Detail information for call <u>not</u> sent.
d^{††}	Detail information sent. (Detail info. defined below).
O	Inbound call information sent only.
o	Outbound and Inbound information sent.

[†] Not available on Memory unit or Scout unit, see supplements.

^{††} Not available on Scout unit, see supplement.

- T** Do not capture DTMF on inbound calls.
- t** Capture DTMF on inbound calls. (Used mostly for Voice Mail and IVR applications)

Operating Commands

- @** Send back # sign. (Used for establishing device communication).
- V** Send firmware Version number, date & time, toggle settings, line numbers.
- J[†]** List all phone numbers in memory. (Used for internal blocking/passing).
- Q[†]** Delete all phone numbers in memory.
- R** Reset system. Toggles set to upper case default values and line numbers set to 01-04.

Data Entry Commands

- Nnnnnnnnnn <CR>[†]** Add phone number to memory for internal block/pass feature.
- Zmmddhhmm <CR>** Set date and time on internal device clock.
- Wnn <CR>^{††}** Normal use (toggle "K" set) is to block call on line **nn**. Usually sent after the CID string and before the 2nd ring. Or, pass call on line **nn**. ("k" set).

Detail Mode Output^{††}

- | | | |
|-------------|------------------------|------------------------------|
| nn R | Date & Time | Ringing on line nn |
| nn F | Date & Time | Off Hook on line nn |
| nn N | Date & Time | On Hook on line nn |
| nn H | Date & Time | Hook Flash on line nn |

Additional Detail Information

- | | | |
|---------------|------------------------|--|
| nn Vxx | Date & Time | Firmware version of slave ROM (Displays on start up) |
|---------------|------------------------|--|

Error Condition

- ?** Error (invalid command or could not interpret data)

[†] These loaded numbers are used for a different function (Caller ID connect numbers) in the Scout unit.

^{††} Not available on the Scout unit.

Comprehensive Format (Recommended)

When the capital **X** toggle is set, the output is similar to the following:

```
01 I S 0276 G B3 09/26 11:28 AM 800-555-1212 AT&T INFORMATIO <CR/LF>
```

01	Line number field	2 char.	(preset by user)
I	Inbound/Outbound field	1 char.	(or O for outbound)
S	Start/End of call field	1 char.	(or E for end)
0276	Duration of call in seconds	4 char.	(only sent at end of call)
G	Good checksum for CID string	1 char.	(or B for bad checksum)
B3	Number & Type*of Ring(s)	2 char.	(only sent on end of call)
09/26	Date field	5 char.	
11:28	Time field	5 char.	(12 hour format)
AM	AM/PM field	2 char.	
Phone #	Phone number field	14 char.	(in some cases only 7 digits sent)
Name	Name field	15 char.	(sent only in some areas)

Note: Each data string is followed by a carriage return and a line feed.
1 space separates each field

* Type of Ring is valid only if distinctive ring service is ordered from telephone company.

Limited Format:^{††}

When the lower case **x** toggle is set, the output is similar to the following:

```
$01 09/26 02:30 PM 8005551212 I AT&T INFORMATIO <CR/LF>
```

\$	Leading dollar sign	1 char.	("c" toggle set)
01	Line number	2 char.	(preset by user)
09/26	Date field	5 char.	
02:30	Time field	5 char.	(12 hour format)
PM	AM/PM field	2 char.	
Phone #	Dashes removed	14 char.	("c" toggle set)
I	Inbound call	1 char.	(or O for outbound)
Name	Name field	15 char.	(sent only in some areas)

Notes: Each data string is followed by a carriage return and a line feed.
5 spaces separate each field (except **\$** and line number).

^{††} Not available on Memory unit or Scout Unit.

IN-DEPTH DISCUSSION OF TOGGLES, COMMANDS, AND FORMATS

Setup Toggle Discussion

E,e Echo

Unit will or will not echo back commands that are sent to it. Set to lower case **e** for echo on.

C,c Leading \$ character and dashes removed in phone number field

Some applications need to detect a certain character in order to perform an operation. When this toggle is set to **c**, the unit places a \$ character before each data string. This includes detail data strings such as Ring, Off hook, On hook, and Hook flash (see toggle "**D,d**"). Also when **c** is set, the dashes are removed from the telephone number field. The telephone number justification remains as set by the "**X,x**" toggle.

X,x Format Options[†]

Two different data formats can be sent by the unit. The limited format sends the line number, date and time, phone number, inbound/outbound indication, and name (if available). The comprehensive format sends the same along with the duration of the call, checksum indication, and number of rings. The comprehensive format is strongly recommended. More detail on these formats on page 9.

U,u Internal Block/Pass^{††}

The unit can block or pass incoming calls based on a match against phone numbers pre-loaded into the on-board memory. The "**u**" toggle turns on the Block/Pass feature. The "**K,k**" toggle determines whether the unit blocks or passes calls that match these numbers.

K,k Block or Pass Select^{††}

Set **K** to pass all calls until defeated. Set **k** to block all calls until defeated. These toggles can be defeated by either the "**W**" command sent by the host computer or signal sent by the internal memory when a phone number match is found.

A,a Data Delivery Option (Start & End or Start/End)

The unit is capable of delivering a data stream to the host computer immediately as the call arrives, when the call terminates, or both. For an inbound call, immediate data delivery allows the Caller ID information to be utilized before the call is answered for purposes of database queries, call routing, etc. Delivering the data stream after the call ends provides additional information about the call to the application program such as, the duration of the call and the number of rings before the call was answered. If lower case "**a**" is set, data is sent as defined by the "**S,s**" toggle.

S,s Data Delivery Option (Start/End)

For this toggle to affect operation "**a**" must be set. If call data is to be sent before the call is answered, set toggle to **S**. If call data is to be sent only after call terminates, set toggle to **s**. If call data is to be sent before and after the call, set toggle "**A**".

[†] Not available on Memory unit or Scout unit.

^{††} Not available on Scout unit.

B,b First Ring Suppression

When this toggle is set to **B**, the first ring to the output jack on each line is suppressed. Since the Caller ID stream is sent between the first and second rings on the telephone line, this prevents the call from being answered before the information is sent. However, in some cases, hearing the first ring might be essential for the user to respond to the call in a timely manner. If this is true, set this toggle to "**b**".

D,d Detail Information[†]

Some software applications may need additional call data. When the lower case "**d**" toggle is selected, the unit can provide an indication for Ring, Off hook, On hook, and Hook flash. The format is as follows: line number (**nn**); space; and either a **R** (**R**ing), **F** (**ofF** hook), **N** (**oN** hook), or **H** (**H**ook flash). The date and time (HH:MM:SS) follow at the same offset as the date/time field in the comprehensive format. In the detail mode, the time is delivered in a 24 hour format. (Please note: If the "**c**" toggle is selected, a leading **\$** will be added to the above data string). For more information see the section on Detail Mode on page 9.

O,o Inbound/Outbound Select

For basic Caller ID applications, use the upper case **O**. If complete call accounting is required, use lower case **o**. The lower case **o** instructs the unit to deliver for both inbound and outbound calls.

T,t Inbound DTMF Monitoring

When set to lower case **t**, unit will monitor for DTMF touch tones on inbound calls. This toggle is used primarily for voice mail and Integrated Voice Response (IVR) applications. The DTMF digits dialed during the call will be displayed in the "Name" field on the call record sent at the end of the call. If the Caller ID service provides the caller's name, the name will still appear in the call record sent at the beginning of the call.

Operating Commands Discussion

@ Handshaking character when # is sent

The unit will return # when **@** is sent. This can be used to establish communication between the computer and the unit. One application for this command is a software setup routine that automatically searches for the unit by sending an **@** character on each COM port and IRQ until a # is returned. The corresponding COM port and IRQ number then can be set automatically in the application.

V Firmware version and all settings

This command returns the firmware version, all toggle and line number settings, and date & time (in military format) on the internal time clock. On start-up, toggles will be defaulted to all upper case values; the line number will be set to **01**; and date & time will be set to zero. All toggles and line number settings are stored in non-volatile memory and will remain saved even if the unit loses power. The internal clock does not run while the unit is off, and therefore, it must be reset when power is restored. The clock can be reset by the software using the "**Z**" command or will be reset on the first good Caller ID signal. Subsequent Caller ID signals with good checksums will continue to reset the internal time clock with the telephone company's time.

[†] Not available with Scout unit.

J List all phone numbers in memory[†]

This command lists all telephone numbers stored in non-volatile memory. These numbers can be used to either block or pass calls to the output phone jacks. (Refer to the section on use of toggles "U,u" and "K,k"). The non-volatile memory can store up to fifty, 10 digit or 7 digit phone numbers. Phone numbers are entered using the "Nnnnnnnnnn" command discussed in Data Entry Command section, see section below.

Q Delete all phone numbers in memory[†]

This command deletes all telephone numbers stored in non-volatile memory.

R Reset System

This command resets the operating system and resets all toggles to upper case values. It does not reset the line number or the baud rate. The baud rate can only be changed by moving a jumper on the circuit board, page 14. The line numbers of the unit can be changed pressing the line select button on the rear of the unit for 2 seconds. The time clock can be reset by using the "Zmddhhmm" command (page 8), or by capturing a good Caller ID signal.

Data Entry Commands Discussion

Nnnnnnnnnn <CR> Add phone number to memory[†]

This command allows telephone numbers to be entered into non-volatile memory. These numbers can be used to either block or pass calls to the output phone jacks. See section on use of toggles "U,u" and "K,k". The on-board memory can store as many as fifty, 10 digit or 7 digit phone numbers. Any attempt to enter other than a 7 or 10 digit number will cause the unit to send back a question mark and not accept the number into memory. Please note: 7 digit phone numbers should only be used in areas where the Caller ID number only contains 7 digits, see section entitled Comprehensive Format (page 11). If you want to add "Private" and "Out-of-Area" and callers to the memory list, refer to the following:

For **Private** Callers, enter: **N77<CR>**

For **Out-of Area** Callers, enter: **N66<CR>**

Zmddhhmm <CR> Set date and time on internal clock

This allows the programmer to set the internal clock on the unit. Since there is no battery backup on board, once power is removed from the unit, the internal clock resets to "00/00 00:00:00". This command may never have to be used, due to the following: On the first incoming call with Caller ID and a good checksum, the internal time clock will be set to the time sent in the Caller ID signal. On every call thereafter, the internal clock is reset to the Caller ID time. The format for time entry using the "Z" command is **mm** (month), **dd** (day), **hh** (hour), and **mm** (minute).

Wnn <CR> Block (or pass) call on line **nn**^{††}

This command should be sent after the Caller ID signal and before the second ring. This way the call can be blocked (or passed) based on the Caller ID information. If toggle "B" is set, the first ring will be blocked. The application program determines whether the remaining rings should be blocked or passed. Please note: Normally, toggle "K" is set. This allows all calls to pass until a "W" is sent by the application (or an internal command is sent by the hardware memory). In a secure phone line application, the toggle "k" might be set in order to block all calls until the "W" command is sent (or the internal command is sent by the hardware memory).

[†] These loaded numbers are used for a different function (Caller ID connect numbers) in the Scout unit.

^{††} Not available on Scout unit.

Detail Mode Output Discussion[†]

If the toggle "d" is set, all detail information on each call is sent immediately. The detail events include Ring, On Hook, Off Hook, and Hook Flash. Each event reported by the unit starts with the line number, followed by the abbreviation of the event, and finally, the date and time. The date and time is offset 13 characters to the right so that it will appear in the same offset position as the date and time in the comprehensive format. Also, the time is displayed in a military format so that the time of the event can be determined exactly. An example is shown below.

01 R	11/07 07:43:52	Ring on line 1 at 7:43 AM
01 F	11/07 17:45:04	Off Hook on line 1 at 5:45 PM
04 N	11/07 10:46:23	On Hook on line 4 at 10:46 AM
01 H	11/07 22:11:08	Hook Flash on line 1 at 10:11 PM

Error Condition Discussion

A question mark ("??") is returned on most any input that is not valid. Also, any non-interpretable characters contained within a Caller ID string will be sent as a question mark. Most likely the checksum will be calculated as "bad".

Format Discussion

Two different output formats are available. They are selected using the "X,x" toggle. The comprehensive format is preferred by most programmers because more information is delivered about each call. The limited format is not as informative or flexible, but may be preferred in basic Caller ID applications.

Comprehensive Format - Inbound Calls

The comprehensive format is highly recommended for all applications. The amount of data sent, combined with the flexibility of sending the data at the end of the call, makes it the format of choice for even very simple applications. The data string can be, 63 characters in length, including the leading \$ sign (if the "c" toggle is set), spaces, the carriage return, and line feed characters at the end of the data.

The comprehensive format for an inbound call is shown in Fig. 2a. The line number always precedes the data string. In this example, data from line 3 is discussed.

The Inbound/Outbound and Start/End of Call Indicators use I/O and S/E respectively. Remember that the unit can be set to send data on inbound and outbound calls or only on inbound calls (toggle "O,o"). Also, the data stream can be sent at the start of the call, end of the call, or both (see toggles "A,a" and "S,s").

Since the duration of the call is sent only after the call is complete, toggles "O,o" and "S,s" must be set so the unit will send data at the end of the call.

[†] Not available on Scout unit.

Comprehensive Format [Recommended]

(Capital "X" Toggle Set)

Figure 2a

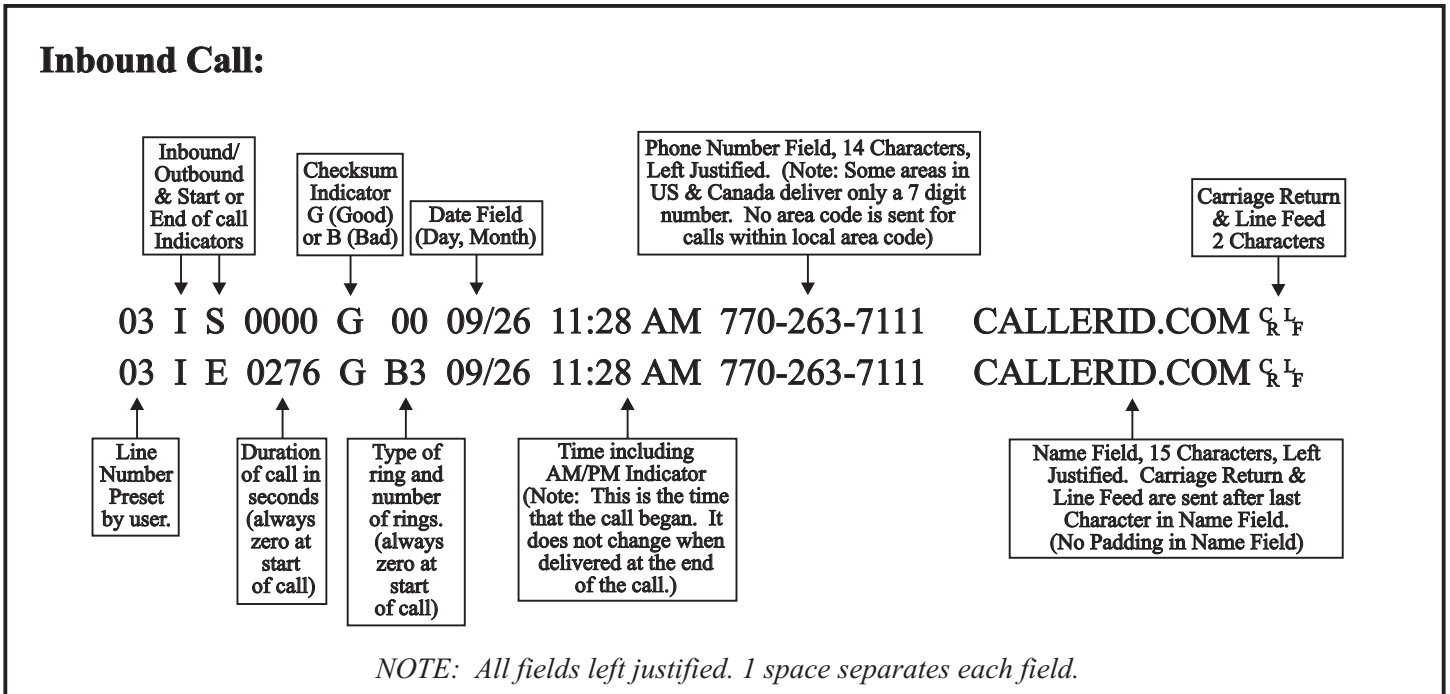
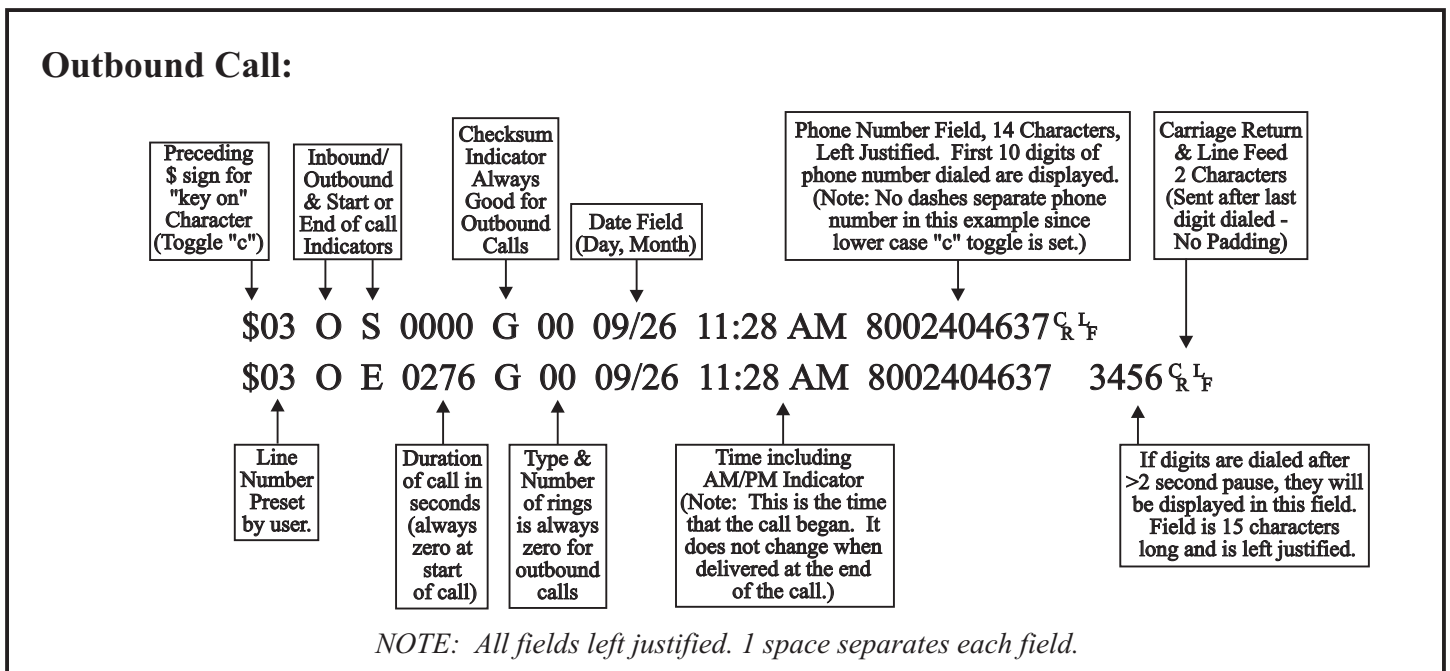


Figure 2b



The Caller ID string sent by the telephone company always contains a checksum. The unit compares its checksum with the checksum sent by the phone company and displays the either "G" (Good) if the two match or "B" (Bad) if they do not match. The application programmer may elect to ignore this indicator and determine the validity of the data after reading in the data stream.

The next field contains both the number of rings delivered by the telephone company before the call was answered and the type of ring. A service called Distinctive Ring or Ring Master is offered to customers in many areas. It allows up to 4 telephone numbers to be routed to one phone line. Each phone number dialed causes the telephone to ring differently. The unit will determine which ring pattern is delivered and mark it as A,B,C, or D. Please note the number of rings is always zero except when the data is delivered at the end of an incoming call.

The date and time information is sent by the phone company as part of the Caller ID signal on each incoming call. For each incoming call with a good checksum, the time and date information will be used to reset the internal real time clock to match the telephone company's clock.

The phone number field for the comprehensive format is 12 characters and left justified. Dashes are inserted when the "C" toggle is set. If the "c" toggle is set the dashes are removed (and a leading \$ sign is inserted in front of the data string). In some areas of the US and Canada, no area code is sent for calls within the local calling area. In this case, the unit will send the 7 digit phone number, left justified. If the application software will be used in different areas of the country, it is suggested that the local area code reside in the software to be appended to any 7 digit number delivery to make it a 10 digit number.

In many areas, the name of the caller will be delivered along with the number. This service is sometimes referred to as Caller ID Plus, Caller ID Deluxe, or Enhanced Caller ID. If delivered by the local telephone company, the name will reside in a left justified, 15 character field, following the number field. Names for private residences are usually sent last name first, space, first name, space, and then middle initial. Business names are most often sent as they are listed, but if they over 15 characters, truncation will occur. Even though most local telephone companies send all upper case names, the Bellcore and Bell Canada specification provides for the delivery of both upper and lower case characters.

Comprehensive Format - Outbound Calls

Figure 2b shows the Comprehensive format for outbound calls. Unlike figure 2a, toggle "c" is set. (Remember toggle "c" places a \$ sign before the data stream and removes dashes in the phone number field.)

The outbound indicator displays **O** and the Start/End indicators are the same as inbound calls. The duration of the call is only sent at the end of the call and is displayed in seconds. The checksum indicator is always "good" and the number of rings remains "zero" at all times. The date/time displayed is the date/time that the call was initiated and does not change at the end of the call.

The unit tries to be as "smart" as possible in determining where to place outbound dialed digits. Digits dialed are placed in either the number or name field. The algorithm below explains where the unit places digits.

All digits dialed within 2 seconds of each other will be displayed beginning in the number field. If more than 10 digits are dialed, the additional digits will be displayed in the name field. The "Start" data string for outbound calls will be sent immediately after a period of 2 seconds when no digits are dialed. Any digits dialed after this 2 second interval will be displayed in the name field and will be displayed only at the end of the call. In the example in Fig. 2a, second data string, the 800 number was originally dialed. After a few rings, an automated answering device answered the call. The caller then dialed additional digits responding to voice menu selections.

An exception to this 2 second rule provides for 7 and 10 digit numbers to be reported in the number field on the end record, regardless of the interval between dialed digits.

Limited Format

(Lower Case "x" Toggle Set)

Figure 3a

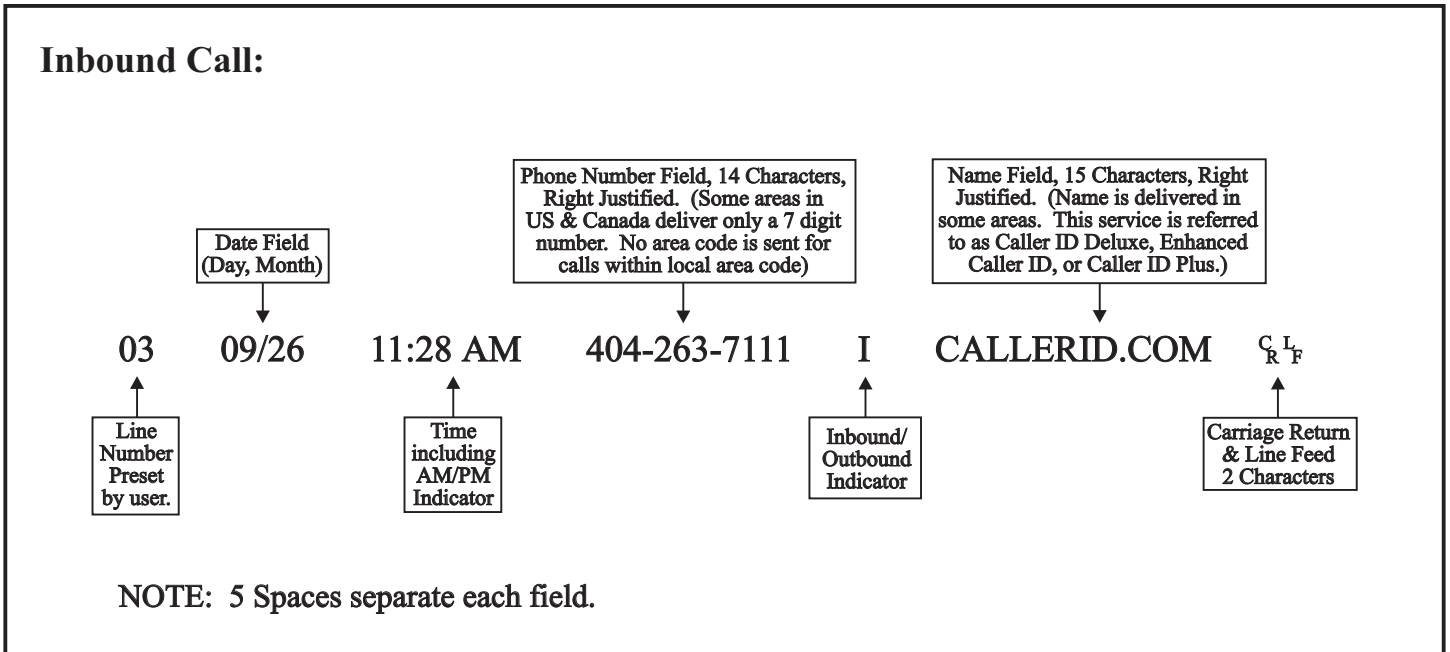
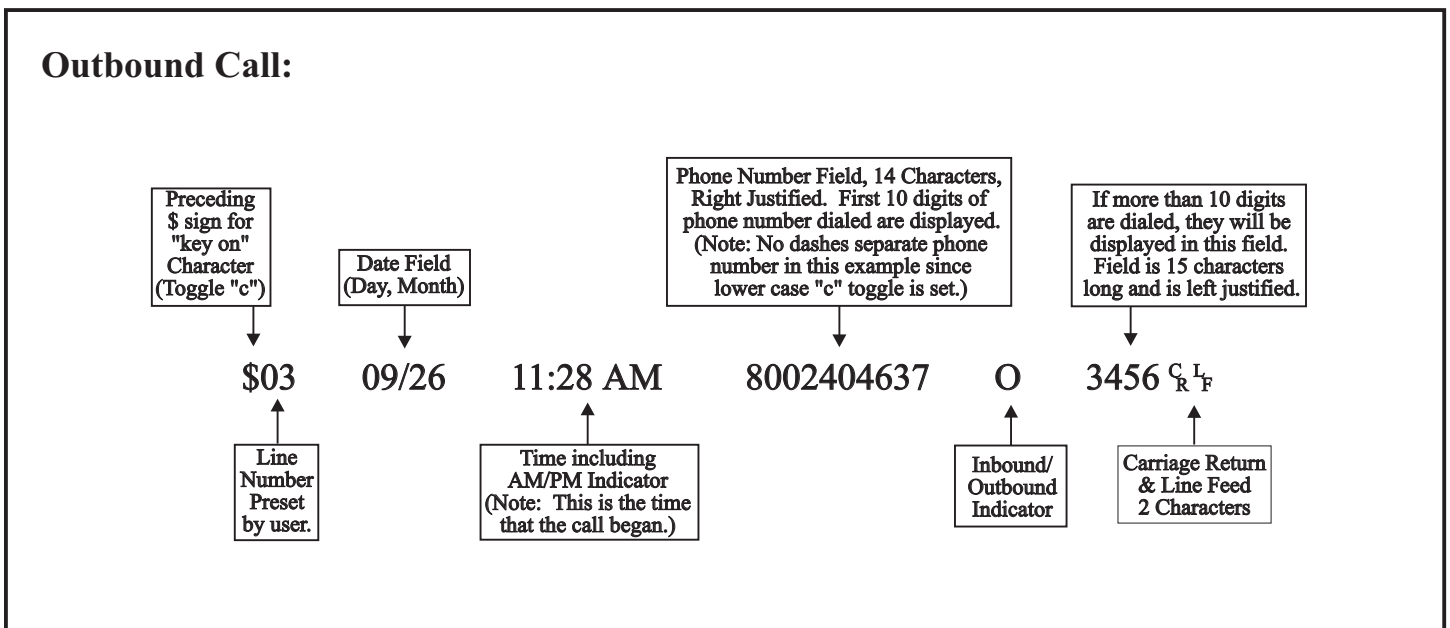


Figure 3b



Limited Format - Inbound Calls †

The limited format is designed for simple inbound Caller ID delivery. Even though outbound dialed numbers can be captured, it is recommended for only the simplest call accounting applications. Even if your application only requires simple inbound Caller ID data delivery, we still recommend the comprehensive format over the limited format. In this way, your application can grow with the increasing needs of your business.

The limited format for an inbound call is shown in Fig. 3a. The data string can be up to 73 characters long including the leading \$ sign (if "c" toggle is set), spaces, and the carriage return/line feed characters at the end of the data. The line number always precedes the data. Data for line 3 is discussed in this example.

The date and time information is sent by the phone company as part of the Caller ID signal on each incoming call. For each incoming call with a good checksum, the time and date information will be used to reset the internal real time clock to match the telephone company's clock.

The phone number field for the comprehensive format is 14 characters and RIGHT justified. Dashes are inserted when the "C" toggle is set. If the "c" toggle is set the dashes are removed (and leading \$ sign is inserted in front of the data string). In some areas of the U.S. and Canada, no area code is sent for calls within the local calling area. In this case, the unit will send the 7 digit phone number, RIGHT justified. If the application software will be used in different areas of the country, it is suggested that the local area code is stored in the software and added to any 7 digit number received so as to make it a 10 digits. In this way, a 10 digit look-up routine can still be used for local calls.

In many areas, the name of the caller will be delivered along with the number. This service is often referred to as Caller ID Plus, Caller ID Deluxe, or Enhanced Caller ID. If delivered by the local telephone company, it will reside in a RIGHT justified, 15 character field, following the number field. Names for private residences will usually be sent last name first, space, first name, space, and then middle initial (if applicable). Business names are most often sent as they are listed, but if they are over 15 characters, truncation will occur. Most local telephone companies send all upper case names, the Bellcore and Bell Canada specification provides for the delivery of both upper and lower case characters.

For reference, the line number field is 2 characters in length. The date field is 5 characters. The time field is 8 characters. The number field is 14 characters. The Inbound/Outbound field is 1 character. The name field is 15 characters. The carriage return line feed characters are sent immediately after the last data character. Therefore, no spaces are sent to fill the remaining characters in the last field. All fields are separated by 5 spaces in the limited format.

Limited Format - Outbound Calls †

Figure 3b shows the Limited Format for outbound calls. Unlike figure 3a, toggle "c" is set. (Remember toggle "c" places a \$ sign before the data string and removes all dashes in the phone number field.)

The date and time come from the on-board time clock. The Inbound/Outbound indicator is placed between the number and name field. All digits dialed within 2 seconds of each other will be displayed beginning in the number field. If more than 10 digits are dialed, the additional digits will be displayed in the name field LEFT justified. The data string for outbound calls will be sent immediately after, a period of 2 seconds, when no digits are dialed. Any digits dialed after this 2 second interval will not be reported. Remember that the data string for limited format cannot be sent after the call is concluded. Therefore, once the data is sent at the beginning of the call, any digits dialed thereafter, will not be reported.

† Not available on Memory unit or Scout unit.

For reference, the line number field is 2 characters in length. The date field is 5 characters. The time field is 8 characters. The number field is 14 characters. The Inbound/Outbound field is 1 character. The name field is 15 characters. The carriage return line feed characters are sent immediately after the last data character. Therefore, no spaces are sent to fill the remaining characters in the last field. All fields are separated by 5 spaces in the limited format.

DISCUSSION OF PRIVATE AND OUT-OF-AREA CALLERS

Two unique messages can be delivered as designated by Caller ID specifications. An "Out-of-Area" message occurs if the information on a caller is unavailable. This is true for most cellular calls and is sometimes the case when the call originates outside the telephone company's Local Access Transmission Area (LATA). This loosely translates to long distance calls. In the near future, Caller ID will be delivered on a long distance basis. Inter-LATA and interstate Caller ID delivery is scheduled to begin in all areas by June, 1996.

A "Private" message is sent for callers who have blocked their Caller ID number from being transmitted to the called party. Blocking can occur either on a per call or on a per line basis. For per call Caller ID blocking, a code (*67) can be dialed before each call is made. In some areas, customers can request that all calls from their line be permanently blocked. In either case, the recipient of calls from these numbers will receive a "Private" or "Anonymous" indication from their Caller ID device.

Private and Out-of-Area messages can occur in either the number or name fields if number and name service is being delivered. For example, some telephone companies allow customers to have private numbers, but names are always sent. In another case, the number might be sent, but the name of the customer is Out-of-Area. This would most likely happen if the customer had just received new service and the telephone company's database had not been recently updated. Be aware that your application software might need to handle various combinations of number, name, private, and out-of-area messages in both the number and name fields.

BAUD RATE SELECTION:

The baud rate is preset from the factory at 9600. The baud rate can be changed to 1200 baud by changing the position of a small shorting plug (or jumper) on the circuit board. To change the baud rate:

1. Disconnect power supply.
2. Expose the circuit board by removing the two screws on the bottom of the unit.
3. Locate the 3 pin header marked "JP1."
4. Move the jumper to connect the pin next to the edge on the board with the center pin.
5. Replace cover and reconnect power supply.

CONNECTING UNITS TOGETHER[†]

Use the supplied serial cable to connect unit #1 with unit #2. The cable attaches to the unit #1 port marked "To Next Unit" to the unit #2 port marked "To Computer." Unit #2 connects with unit #3 in the same manor.

SETTING LINE NUMBERS ON INDIVIDUAL UNITS CONNECTED TOGETHER[†]

As many as 8 monitoring Caller ID units can be connected together into one serial port. Each unit has a line selector switch located on the rear panel. This switch is used to set up additional units for the appropriate line numbers. Each time the switch is depressed for 2 seconds the line numbers on the unit will increase by four. For example, the switch should be pressed once for the second unit to set it for lines 5 through 8. The switch should be pressed twice on the third unit to set it for lines 9 through 12. Additional unit line numbers can be set accordingly.

The switch will set line numbers up to 49 and then roll over to 1. Loss of power to the unit will not affect line numbers set by the switch. The line number set for channel 1 of each unit can be seen in the HyperTerminal program described in the "Loopback Test" above. Within the main terminal screen, type a capital "V" (for version). The unit will respond with the version of the firmware, unit toggle settings, and the line number of Channel 1.

Use the supplied serial cable to connect unit #1 with unit #2. The cable attaches to the unit #1 port marked "To Next Unit" to the unit #2 port marked "To Computer." Unit #2 connects with unit #3 in the same manor.

EXPLANATION OF START UP SEQUENCE AND FRONT PANEL LIGHTS

Once the unit is powered on, it goes through a start up sequence. The power light comes on and the relays for each channel are individually pulsed. At this point, the unit is operational and is ready to monitor calls. The units then checks to see which channels have active phone lines attached. This procedure takes approximately 25 seconds. Solid channel lights indicate that active phone lines are attached. Lights on channels without active lines connected, will turn off.

When a phone goes off hook, the channel light for that line will flicker at a low level. The light will then come on for any touch tones dialed. Once the phone goes on hook, the channel light will return to its normal lit state. On inbound calls, the channel light will follow the ring pattern on the line. When the ring signal is present the light will be on. Between rings, the light will go off. Also, when the Caller ID signal is present on the line, the light will come on momentarily

[†] Not available on Memory or Scout Units.

SPECIFICATIONS

Supply Voltage:	9 VDC, center negative
Supply Current:	Less than 250 mA
Loop Current Draw:	Less than 1 mA
Loop Voltage:	30 to 105 VDC
Ringing Voltage:	60 to 130 VAC
Insertion Loss:	Less than 0.3 dB
Voltage Drop:	2.7 VDC at 20 mA loop current
Dimensions:	8.0" W x 2.0" H x 6.25" D
Ringer Equivalence:	(REN) 0.1 B

FCC INFORMATION

This unit is designed to conform to federal regulations and complies with Part 68 of the FCC rules. On the back of this equipment is a label that contains the FCC registration number and ringer equivalence number (REN) for this equipment. Upon request, you may have to provide the FCC registration number and the REN to your telephone company.

The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the REN's on any one line should not exceed 5. If too many devices are attached, your phones may not ring properly and other devices on the line may not detect the ring signal.

In the most unlikely event that your unit causes significant problems on the telephone line, the telephone company can disconnect your service. The telephone company will attempt to notify you in advance and will advise you of your right to file a complaint with the FCC.

The telephone company may make changes in its technical operation and procedures that may affect the operation of this device. The telephone company is required to give adequate notice of such changes. This product should not be connected to coin operated or party line systems.

MANUFACTURE'S INFORMATION

CallerID.com
3107-D Medlock Bridge Road
Norcross, GA 30071

Sales	(800) 240-4637
Customer Service	(770) 263-7111
FAX	(770) 263-0049
Email	staff@callerid.com
Web Site	www.callerid.com

WARRANTY INFORMATION

CallerID.com will repair this product with new or rebuilt parts, free of charge, when returned postage prepaid to the CallerID.com repair facility in Norcross, GA within 90 days from the date of original purchase.

This warranty is extended only to the original purchaser. A purchase receipt or other acceptable proof of purchase date will be required before warranty service is rendered.

This warranty covers failures due only to defects in materials or workmanship occurring during normal use. It does not cover damage which occurs in shipment; failures which are caused by products not manufactured by CallerID.com; failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification or unintended use of product; service by anyone other than an authorized CallerID.com repair facility; or damage attributed to an act of God. Lightning is considered an act of God.

CallerID.com makes no other warranty, either expressed or implied, with respect to this product.

If a problem develops concerning this product, contact your local dealer or CallerID.com directly for a Return Material Authorization (RMA) number. A RMA number is required for all returns.

Quick List of Toggles and Commands

- E Echo OFF
- e Echo ON

- C \$ sign not sent as leading character in data stream & dashes inserted in phone number.
- c \$ sign is sent as leading character in data stream & dashes removed in phone number.

- X Comprehensive format with duration and checksum.
- x Limited format denoting only inbound and outbound.

- U Internal blocking/passing OFF.
- u Internal blocking/passing ON. (Block or pass is determined by "K,k" toggle).

- K Pass calls until notified by Internal Memory routine ("u") or by W command.
- k Block calls until notified by Internal Memory routine ("u") or by W command.

- A Data sent BEFORE and AFTER call.
- a Data sent as defined by "S,s" toggle.

- S Data sent at the Start of call only. (If "a" set above).
- s Data sent at the End of call only. (If "a" set above).

- B Block first ring to output jack.
- b Block first ring set to OFF.

- D Detail information for call not sent.
- d Detail information sent. (Detail info. defined below).

- O Inbound call information sent only.
- o Outbound and Inbound information sent.

- T Do not capture DTMF on inbound calls.
- t Capture DTMF on inbound calls

Operating Commands:

- @ Send back # sign. (Used for establishing device communication).
- V Send firmware Version number, date & time, toggle settings, line numbers.
- J List all phone numbers in memory. (Used for internal blocking/passing).
- Q Delete all phone numbers in memory.
- R Reset system. Toggles set to upper case default values

Data Entry Commands:

- Nnnnnnnnnnn <CR> Add phone number to memory for internal block/pass feature.
- Zmmddhhmm <CR> Set date and time on internal device clock.
- Wnn<CR> Normal use (toggle "K" set) is to block call on line nn. Usually sent after the CID string and before the 2nd ring. Or, pass call on line nn ("k" set).

WHOZZ CALLING?
with Memory Supplement

Overview

The Whozz Calling? with the On-Board Memory option (WC/Mem) is designed for call data collection and on-board storage. All data written to the serial port is simultaneously written to the on-board memory; therefore, call data can be used in real time, collected in memory and downloaded later, or both.

The unit can be configured various ways using the setup toggles. These toggles can be set to either their upper or lower case values. A comprehensive discussion on setup toggles is found on page 6. Some toggles can not be selected in the WC/Mem unit. Only the limited format "x" toggle has been disabled.

Features of the standard Whozz Calling? that are not available features on the WC/Mem unit are:

- (1) Limited format ("x" toggle)
- (2) Connecting individual unit together into one serial port

The format for stored call data is different than the format that is sent out the serial port in real time. Also, additional commands are available on the WC/Mem unit for purposes of downloading the on-board memory.

Setup

It is suggested that the user become familiar with the operation of the unit before installing at a remote location. For testing purposes, the unit should be connected to a PC via the serial port, and monitored with a communications program set to terminal mode. The communication parameters for a direct serial connection are listed below. Experiment with the toggles and setup parameters while monitoring the displayed information. Remember, all data written to the serial port is simultaneously written to the on-board memory. The memory download commands are listed on page 22.

- (1) Plug in the serial cable to the Computer. Set your communication program on your computer to 9600 Baud, No Parity, 8 Bits, 1 Stop Bit, Half Duplex, ANSI emulation and go into the terminal mode. (Half Duplex will echo any commands typed).
- (2) Plug in the power supply. The unit will go through its start-up sequence, display a firmware version number, and the number of calls in memory.

If the firmware version does not display on your screen, check your communication parameters and/or any COM port and IRQ conflicts. Use the supplied Loopback connector to determine whether your serial port is transmitting and receiving properly. Plug in the Loopback connector into the serial port and type any character. If you are in Half Duplex you should see double the characters you type on your screen. In Full Duplex mode typed characters will appear once on your screen if your serial port is functioning properly.

- (3) Type a Capital "V". This is the version command. It will show the version of your firmware, the status of all the setup toggles, the line numbers that the unit is set to, and the date and time. The date and time will be zero at this point, but can be set two different ways. If Caller ID is active, the date and time will be set automatically when the first inbound call is received. It can also be set using the "Z" command. Type "Zmmddhmm<CR>", where **mm** is the month, dd is the day, hh is the hour (in 24 hour format), and mm is minutes. Refer to the manual for the standard unit for more information.
- (4) The unit should be ready to capture call data. Make phone calls to the unit and monitor call data that is being written to the memory with your serial connection.

NOTE: The memory will not function as a "buffered" memory. In other words, call data can either be written to or read from memory at any one time; therefore, while data is being downloaded from memory, new call data will be lost.

WC/Mem Additional Commands

Commands do not require a carriage return <CR>, unless otherwise indicated.

Call Record Memory Commands

?	List number of call records in memory. First record is #0000.
F	List all call records in memory (non-compressed format).
=xxxx<CR>	Set pointer number and list record "xxxx", where "x" is a four digit record number. Leading zeros are not required, i.e "=26<CR>" is valid.
\	List call record at current pointer number.
>	List the next call record.
<	List the previous call record.
]	List all records from start to current pointer number.
[List all records from current pointer to end of call records.
- (Dash)	Stop a listing in midstream. (You may need to hold down this key for a moment to stop listing, especially if connected through the serial port).
Y	Erase all calls in memory. Wait 5 seconds for "OK" to be returned.
W	Returns the Welcome message, firmware version, and number of records in memory

Compressed Commands (used only with the Scout unit)

f	List all call records in memory in compressed format.
{	List records from start to current pointer number in compressed format.
}	List all records from current pointer to end in compressed format.

Note: Since toggles have no "lock" to prevent them from being accidentally changed from the serial port, it is a good idea to use the "V" command to check the unit's toggles after manually downloading data.

Download Format

The data format for the WC/Mem differs slightly from the standard Whozz Calling? The comprehensive format (see page 5) contains the same information but the fields are rearranged and slightly modified for faster downloads and quicker visual scanning. The two formats are compared below.

Format Example when capturing Serial Port in Real Time:

```
01 I S 0276 G 03 09/26 01:28 PM 800-555-1212 AT&T INFORMATIO
```

01	Line number field	2 char.	(preset by user)
I	Inbound/Outbound field	1 char.	(or O for outbound)
S	Start/End of call field	1 char.	(or E for end)
0276	Duration of call in seconds	4 char.	(only sent at end of call)
G	Good checksum for CID string	1 char.	(or B for bad checksum)
B3	Number of & type* of ring(s)	2 char.	(only sent on end of call)
09/26	Date field	5 char.	
11:28	Time Field	5 char.	(12 hour format)
PM	AM/PM field	2 char.	
Phone #	Phone number field	14 char.	(some areas only 7 digits sent)
Name	Name field	15 char.	(sent only in some areas)

Note: Each data string is followed by a carriage return and a line feed.
1 space separates each field.

* Type of Ring is valid only if distinctive ring service is ordered from telephone company.

Format Example when Downloading from Memory:

```
3526 01 09/26 13:28 I S 0276 G 03 800-555-1212 AT&T INFORMATIO  
-----
```

*	3526	Call record number	4 char.	(first call is 0000)
	01	Line number field	2 char.	(preset by user)
*	09/26	Date field	5 char.	
*	13:28	Time field	5 char.	(24 hour format)
	I	Inbound/Outbound field	1 char.	(or O for outbound)
	S	Start/End of call field	1 char.	(or E for end)
	0276	Duration of call in seconds	4 char.	(only sent at end of call)
	G	Good checksum for CID string	1 char.	(or B for bad checksum)
	B3	Number of & type of ring(s)	2 char.	(only sent on end of call)
	Phone #	Phone number field	14 char.	(some areas only 7 digits sent)
	Name	Name field	15 char.	(sent only in some areas)

* **Notice that the Time and Date fields have been moved to the left after the record number and line number. This helps with quick visual scanning and selective downloading.**

Notes: (1) Each data string is followed by a carriage return and a line feed. 1 space separates each field.
(2) Private or Out-of-Area callers are displayed in abbreviated fashion as "P" or "O" in the number and name fields. This saves download time.

WHOZZ CALLING?
Supplement for Scout Unit

Introduction

This supplement is intended to familiarize the user with the additional commands and functionality, along with some limitations of the Scout unit (formally know as Whozz Calling? with Modem option). Some differences from the standard Whozz Calling? are the start-up procedure, setup toggles restrictions, and the format for stored call data. Additional commands are available for downloading the memory through the serial port or via the modem connection. Individual Scout units cannot be linked together. If more than 1 unit is to be used on a telephone system, each unit must accessed individually.

We suggest that the user become familiar with the operation of the unit before installing it at a remote location. For testing purposes connect the unit to a PC via a serial port, and monitor with a communications program set to terminal mode. The communication parameters for a direct serial connection are listed in the Setup section below (see page 27). Experiment with the toggles and setup parameters while monitoring the displayed information. All data written to the serial port is simultaneously written to the on-board memory. Memory download commands can be used from either the serial or modem connection. We recommend that the user try at least 4 of the 5 types of modem connection techniques before installing the unit at the intended site.

Overview

This product is designed for call data collection, on-board storage, and remote retrieval of data via modem (remote call accounting). For other applications, the on-board memory can be accessed and downloaded by a direct serial connection with a computer. Furthermore, the unit can also provide for the immediate delivery of call data to a serial port, an external storage device, or a serial printer. All commands and unit settings can be accessed through the serial or modem interface.

Types of Modem Connections

If this unit is to be used for storage and remote download, it is important to understand the 5 different ways the modem can be accessed to retrieve data.

(1) Local Dial-Out

A modem connection can be initiated by someone picking up the phone on any line connected to the Scout unit. They simply press down the digit "7" for at least 3 seconds, and hang up. The on-board modem waits 25 seconds and go off-hook on line 1. It dials the "Key" number stored into a special "Stash Memory" location which is the direct telephone number of the off-site (host) modem. The host modem can answer manually using the "AT A" command, or automatically with host modem set to an auto answer mode. We recommend that the Key number is entered when the unit is initially set up using the direct connection to the serial port. The Key number can be entered remotely via modem access after the unit has been installed, but this practice will limit your initial connection types.

(2) Remote Dial-Out

This method is similar to number (1), but involves calling from an off-site location into the Scout unit. The user calls one of the on-site telephone numbers. The call can be answered by either a individual or a device such as an answering machine. Once the line is answered, the caller presses a "7" for at least 3 seconds and then hangs up. As with number (1), the unit waits 25 seconds, go off-hook on line 1, dials the host modem, and makes a data connection.

(3) No Answer Connect with Password Protection

With this method the host modem dials the Scout unit directly. The host modem calls the telephone line connected to the line 1 of the unit in order to establish a data connection. The on-board modem will answer on the 10th ring and connect. At this point, 5 "@" signs are entered from the host to invoke the ">" prompt. The password is now entered followed by a "^" (carat). The passcode is the same as the Key number. If no Key number exists in Stash Memory, then no passcode is required, only the 5 "@" signs and the "^" symbol are needed. Sometimes the modem connection itself will create "@" symbols. If this is the case, type only enough "@" symbols to invoke the ">" prompt, then continue by entering the password and caret.

(4) Instant Caller ID Access

Perhaps the easiest way to establish a modem link is to use the Caller ID instant connection feature. The telephone number of the host modem is entered in the Stash Memory. When the host modem dials the Scout on line 1, the Caller ID number matches, and an instant modem connection is established. No passcode is required for this type of connection.

(5) Automatic Timer Dial-Out

The Scout is equipped with a timer system that enables the operator to program the unit to dial the host modem at predetermined days and times of the month. The host modem also, must be set to answer the call to download the data at each time prescribed. A full discussion of the automatic timer dial-out configuration and operation is found on page 30.

Data Formats

The data download from the memory of the Scout differs from that of the standard Whozz Calling? Only the comprehensive format is available, the limited format (lower case "x" toggle) can not be selected. The data format delivered to the serial port in real time is slightly different from the way it is presented when downloading the memory. Both contain all the fields defined by the comprehensive format, but the order rearranged. The version of comprehensive format downloaded from the memory is more conducive to quick scanning and location of records in a large file.

The unit can be configured in various ways using the setup toggles. These toggles can be set to either their upper or lower case values. An in-depth discussion on setup toggles is found on page 6. Some toggles can not be selected in the Scout unit. As discussed above, the "x" toggle can not be set. Also, the "d" (detail mode) and the "k" & "u" (call blocking) toggles are not operational. These functions will not be important in typical Scout applications.

Setup

The user should first set the toggles that define the output of the unit, then enter the modem password ("Key" number), and, if used, the Caller ID numbers for instant modem connection and the dial-out timers for automatic dial-out. These steps are discussed in detail below. We recommend that initially, the setup toggles, Key number, modem access Caller ID numbers, and dial-out timers be entered from the serial interface. These toggles and access numbers can be set and/or changed remotely via modem connection at any time in the future.

(1) Set Communication Parameters

Plug in the serial cable to the Computer. Set your communication program on your computer to 9600 Baud, No Parity, 8 Bits, 1 Stop Bit, Half Duplex, ANSI emulation and go into the terminal mode. (Half Duplex will echo any commands typed).

Note: The direct serial communication data rate is 9600 baud, but the on-board modem is a 2400 baud device. In other words, if the data is downloaded remotely via a modem connection, 2400 baud is the fastest connection rate possible.

(2) Startup Unit

Plug in the power supply. The unit will go through its start up sequence, display a firmware version number, and the number of calls in memory. If the firmware version does not display on your screen, check your communication parameters and/or any COM port and IRQ conflicts. Use the supplied loop back connector to determine whether your serial port is transmitting and receiving properly. Refer to the trouble shooting section, page 33 if you have problems communicating with the unit.

(3) Communicate with Unit

Type a Capital "V". This is the version command. It will show the version of your firmware, the status of all the setup toggles, the line numbers that the unit is set to, and the date and time. Configure the unit for your application by simply typing upper or lower case toggle letters. For more on setup toggle see page 3. Confirm unit settings by typing capital "V" again, you should see:

Vx.xm ECXUDasoBKT L=01 00/00 00:00:nn (Most often used setup for remote call accounting)

where "V" stands for version, "x.x" is the version number of the firmware, "m" indicates built-in modem type firmware, "ECXUDasoBKT" are the toggle settings, "L=01" indicates that the first channel on the unit will report as line 1, and the date and minutes are zero at startup. This toggle string is a normal setup for remote call accounting. The "a" and "s" combination produces only an end record on each call. The "o" turns on monitoring of outbound calls. The "B" instructs the unit to suppress the first ring on inbound calls.

(4) Set Date & Time

The date and time may be zero at this point, but can be set two different ways. If Caller ID is active, the date and time will be set automatically when the first inbound call is received. It can also be set using the "Z" command. Enter:

Zmmddhhmm<CR> Example: Z10311733 (October 31, 5:33pm)

where "Z" is a capital Z, "mm" is the month, "dd" is the day, "hh" is the hour (24 hour format), "mm" is minutes and "<CR>" is a carriage return (Enter Key).

NOTE: The date and time returns to zero when the unit is powered off unless a special battery backup is used. The battery backup for the Scout is available from the manufacturer. This should not be a concern if Caller ID is present on at least one of the phone lines since the first inbound call will restore the date and time on the unit.

(5) Enter the Key number

It acts as the modem password number and the dial-out telephone number to the host modem. This number is not required but is recommended. Enter the exact telephone number that would be dialed to access the host modem (I.E. 7 digit number if local or 1 + 10 digit number if long distance). To enter to Key number type:

Nxxx...xN^<CR> Example: N17702637111N^<CR> (1+ ten digit number for toll number)

where "N" is a capital N, "xx...x" is the 7 digit local or 1+10 digit long distance host modem telephone number, "^" is the carat symbol (Shift-6), and "<CR>" is a carriage return (Enter Key). Use the "J" command to check the memory for this Key number. It is shown with a "^" symbol in front of the number. Change the Key number by simply entering a new Key number. To Erase the Key number use **NN^<CR>** .

(5a) Enter Dialing Prefix

If the unit is required to dial a prefix (9, 8, etc.) to access an outside line before dialing the host phone number then follow instructions below. To enter a prefix number, type:

N003xN\$<CR> Example: N0039N\$<CR> (units dials 9, pauses, and then dials the Key number)

where "N" is a capital N, "003" is a code used to identify the string as a prefix number, "x" is the prefix number dialed, and "\$" ends the string. Use the "J" command to check the memory for this prefix number. It will be displayed with the "\$" symbol in front of the number. Change the prefix number by simply entering a new prefix number. Remove the prefix number by entering **NN\$<CR>** .

(6) Enter Caller ID Connect Numbers

If the Caller ID automatic modem connect feature is to be used, enter the connect number(s) into the Stash Memory. Enter:

NxxxxxxxxN<CR> Example: N7702637111N<CR> (ten digit Caller ID number)

where "N" is a capital N, "xxxxxxxx" is the TEN digit Caller ID telephone number of the host modem (if unit is located in the U.S.), and "<CR>" is a carriage return (Enter Key). The area code and number are sent in the U.S., whereas, in some areas in Canada only the 7 digit Caller ID number is delivered. If there is more than one number that the host modem can dial from, enter all numbers using the same command. Use the "J" command to check the memory for these numbers. Use the "Q" command to erase all Caller ID numbers in memory.

(8) Enter Device ID number

Each unit can be set to an unique device ID number. This is especially important if a large number of units are set for automatic timer dial-out (see next section). The device ID number is set by entering:

Nxxx...xN#<CR> Example: N1234N#<CR> (device ID is 1234)

where "N" is a capital N, "xxx...x" can be from 1 to 10 digits in length, "#" is the # sign, and "<CR>" is a carriage return (Enter Key). Use the "J" command to check the memory for the device ID number. It will be displayed with the "#" symbol in front of the number. To erase the device ID number, type **NN#<CR>**

(8) Enter Automatic Dial-Out Timers

If you will be using the automatic dial-out capability, program the timer numbers by typing:

N01ddhmmN<CR> Example: N01240430N<CR> (24th day of each month @ 4:30am)

where "N" is a capital N, "01" is a code used to identify the string as a dial-out timer, "dd" is the day of the month, "hh" is the hour (24 hour format), "mm" is minutes, and "<CR>" is a carriage return (Enter Key). You can program as many timers as the memory will hold. The entire Stash memory will hold a total of 43 numbers, this includes all timer numbers, Caller ID connect numbers, the Key number and the device number. Use the "J" command to check the memory for these timers. Each timer will be displayed starting with "01". To erase all timer entries in memory use the "Q" command. If erasing remotely use "&Q".

(9) Monitor Calls

The unit is now ready to capture call data. If desired, you can monitor call data through the serial connection. Data can be downloaded from memory at any time through the serial port or via modem connection.

Note: When finished downloading the data via modem connection, it is a good idea to check the unit's setup toggles by using the capital "V" command. We **STRONGLY** recommended to use the "G" command so that the Scout can hang-up gracefully with the host modem. This procedure prevents the on-board modem from tying up the phone line and allows new phone calls to be monitored immediately.

Discussion of Automatic Timer Dial-Out

The scout features a programmable system that enables unattended downloads from the unit on a regular basis. Timers are entered into stash memory to instruct the unit to initiate an outbound call to the host modem. The unit will initiate a call for every timer set, each month. Be aware that there must be a Key number in stash memory in order for the unit to dial-out to the host modem.(see page 28). Timers can be programmed either from the serial port or via the modem connection by entering:

N01ddhmmN<CR> Example: N01240430N<CR> 24th day of each month @ 4:30am

where "N" is a capital N, "01" is always 01 for each timer number, "dd" is the day of the month, "hh" is the hour (24 hour format), and "mm" is minutes. You can enter as many timers as the memory will hold. The entire Stash memory will hold a total of 43 numbers, this includes all timer numbers, Caller ID connect numbers, the Key number and the device ID number.

The unit dials-out on line 1 at each prescribed time. If the connection is not terminated by a "G" (good-bye command), then an error is assumed and the unit re-dials. It will dial-out every 6 minutes for a total of 10 times if it does not download and terminate with a "G". The dialing routine also interprets other events as errors. Each time the line is busy, connection to the host modem is not established, or the connection is lost during download the event is added to the error counter. Once the error counter reaches 10, the unit again starts the dial-out routine 24 hours later. If it can not successfully download after another 10 tries, the unit waits until the next timed event occurs. Note that if another timed event is defined before the 24 hour retry period, the timed event overrides the retry procedure. To erase all timer entries in memory use the "Q" command. If erasing remotely use "&Q".

If you want to download the Scout every day at the same time you can enter a special wildcard timer dial-out command:

N0199hmmN<CR> Example: N01990430N<CR> dial-out every day @ 4:30am

where "N" is a capital N, "01" is always 01 for each timer number, "99" is the wildcard indicating to dial every day, "hh" is the hour (24 hour format), and "mm" is minutes. You can enter as many timers as the memory will hold. The entire Stash memory will hold a total of 43 numbers, this includes all timer numbers, Caller ID connect numbers, the Key number and the device ID number.

Note that more than one wildcard dial-out timer can be entered for more frequent downloads. Also, wildcard dial-out timers do not prevent the use of additional regular dial-out timers programmed.

Scout Additional Commands

The following commands can be invoked through the serial connection or through connection with the modem. Carriage Returns <CR> following commands are not necessary unless otherwise indicated.

Stash Memory Commands

Nxxx...xN^<CR>	Enters the Key number for password & outward dial number to modem.
NN^<CR>	Erases the Key number.
N003xNS<CR>	Enters a prefix number for unit to dial in order to access an outside line.
NNS<CR>	Erases the prefix number.
Nxxx...xN#<CR>	Enters the device ID number.
NN#<CR>	Erases the device ID number.
Nxxx...xN<CR>	Enters a number for a Caller ID type modem connection.
N01ddhmmN<CR>	Enters a timer dial-out event.
N0199hmmN<CR>	Enters a timer dial-out event for every day at the same hour and minute.
Q, &Q	Erases Caller ID connect, & timer numbers. Use “&Q” for remote erase
J	Lists all phone numbers in Stash Memory.

Call Record Memory Commands

&	Toggle unlock. Allows user to change unit toggles remotely.
?	List number of calls in memory. Note that the first record is #0000.
F	Lists all call records in memory (non-compressed format).
=x..x<CR>	Set pointer number and list record "x..x", where "x..x" can be a 2,3, or 4 digit record number. Leading zeros are not required, i.e "=26<CR>" is valid.
\	List call record at current pointer number.
>	Lists the next call record.
<	Lists the previous call record.
 	List all records from start to current pointer number.
[Lists all records from current pointer to end of call records.
- (Dash)	Stop a listing in midstream. (You may have to hold down this key for a moment to stop listing, especially if connected through the serial port).
Y (and Y again)	Erases all calls in memory. Wait 10 seconds for "OK" to be returned.
W	Returns the Welcome message, firmware version, and number of records in memory.
G	(Good-bye) Hangs up on-board modem. <u>Always</u> use this command before hanging up the host modem.
X	Returns device ID number.

Compressed Commands

f	List all call records in memory in compressed format.
{	List records from start to current pointer number in compressed format.
}	List all records from current pointer to end in compressed format.

Password Connection

@@@@@@	After the modem connection is established, type 5 @ signs to return a ">" prompt. The password can be entered only after the ">" prompt.
xxx...x^	Enter the Key number followed by the "^". Enter password after ">" prompt.
* @@@@@@	Enables re-entering of the password. Type "*", unit will return "Pass", then type 5 "@" signs to receive the ">" prompt.

Download Format

The data format in the memory of the Scout differs slightly from the standard Whozz Calling? The comprehensive format (see page 9) contains the same information but the fields are rearranged and slightly modified for faster downloads and quicker visual scanning. The two formats are compared below.

```
01 I S 0276 G B3 09/26 01:28 PM 800-555-1212 AT&T INFORMATIO
```

01	Line number field	2 char.	(preset by user)
I	Inbound/Outbound field	1 char.	(or O for outbound)
S	Start/End of call field	1 char.	(or E for end)
0276	Duration of call in seconds	4 char.	(only sent at end of call)
G	Good checksum for CID string	1 char.	(or B for bad checksum)
B3	Number & Type*of Ring(s)	2 char.	(only sent on end of call)
09/26	Date field	5 char.	
11:28	Time Field	5 char	(12 hour format)
PM	AM/PM field	2 char.	
Phone #	Phone number field	12 char.	(some areas only 7 digits sent)
Name	Name field	15 char.	(sent only in some areas)

Note: Each data string is followed by a carriage return and a line feed.
1 space separates each field.

* Type of Ring is valid only if distinctive ring service is ordered from telephone company.

```
3526 01 09/26 13:28 I S 0276 G 03 800-555-1212 AT&T INFORMATIO
```

*	3526	Call record number	4 char.	(first call is 0000)
	01	Line number field	2 char.	(preset by user)
*	09/26	Date field	5 char.	
*	13:28	Time field	5 char.	(24 hour format)
	I	Inbound/Outbound field	1 char.	(or O for outbound)
	S	Start/End of call field	1 char.	(or E for end)
	0276	Duration of call in seconds	4 char.	(only sent at end of call)
	G	Good checksum for CID string	1 char.	(or B for bad checksum)
	B3	Number & Type*of Ring(s)	2 char.	(only sent on end of call)
	Phone #	Phone number field	12 char.	(some areas only 7 digits sent)
	Name	Name field	15 char.	(sent only in some areas)

* **Notice that the Time and Date fields have been moved to the left after the record number and line number. This is conducive to quick visual scanning and selective downloading.**

Notes: (1) Each data string is followed by a carriage return and a line feed. 1 space separates each field.
(2) Private or Out-of-Area callers are displayed in abbreviated fashion as "P" or "O" in order to save download time.

* Type of ring is valid only if distinctive ring service is ordered from telephone company.

Troubleshooting

Local and Remote Dial-Out

Problem: Unit will not dial out to host modem.

Solution: Check to see if the Key number has been entered into Stash Memory. Use the "J" command to display Stash Memory. The Key number is the number listed after the "^" sign. This should be the direct dial number; if it is a local number do not include area code; if a long distance number be should to include a leading "1". Determine whether you need to program an prefix number to access an outside line (refer to page 28).

No Answer Connect with Password Protection

Problem: Unit does not answer on 10th ring.

Solution: Make sure that the host modem is dialing into Line 1 of the unit. This is the only line that will connect directly to the on-board modem.

Problem: Unit will not accept password.

Solution: You may not have a "Key" number entered into Stash memory. (Remember that the Key number functions as the password). If this is the case, the password will be the "^" sign followed by a carriage return <CR>. If you do have a Key number in Stash memory, then the password is that Key number followed by the "^" sign and a <CR>. If you make a mistake entering the password, type the "*" sign. The unit will return "Pass". Then enter in "@@@@@", and the unit will return a ">" prompt. Then retype the password.

Problem: Host modem times out before 10 ring connect.

Solution: Set host modem to wait longer before timing out. Insert command in host modem setup string: "S7=x", where x is number of seconds before timing out. Suggested value: S7=90.

Automatic Caller ID Connect

Problem: On-board modem does not answer automatically when called from host modem.

Solution: Make sure Caller ID service is enable on Line 1. Make sure you are calling Line 1 with your modem.

Solution: Check to see if the Caller ID 10 digit number that the host modem is dialing from is loaded into Stash Memory. Use the "J" command to display Stash Memory. The Caller ID automatic connect numbers are listed without the leading "^" sign. Also, make sure that the host modem is dialing into Line 1; this is the line in which the on-board modem will connect.

General Problems

Problem: Can not communicate with the unit through the serial port.

Solution: Make sure that your serial port is set to **9600 Baud, No Parity, 8 Bits, 1 Stop Bit, No flow control.** Type capital “V” and see if the unit returns the Version number along with the toggle settings. If the firmware version does not display on your screen, check your communication parameters again and/or any COM port and IRQ conflicts. Use the supplied Loopback connector to determine whether your serial port is transmitting and receiving properly. Plug in the Loopback connector into the serial port and type any character. If you are in Half Duplex you should see double the characters you type on your screen. In Full Duplex mode typed characters will appear once on your screen if your serial port is functioning properly. If the above does not happen then your serial port is not functioning properly. Try another serial port if available or another serial device on the same serial port. If this fails, replace serial port on computer.

Problem: Can not change toggles via a modem connection.

Solution: First type the toggle unlock command “&”, then change the toggles. Toggles will be re-locked upon termination of modem connection.

Problem: Modem starts to connect, but then drops the connection or modem connection is not stable.

Solution: Your host Fax/Modem may be set to Fax mode from a previous Fax sent or received. Use the command “&F” in your modem setup string. This will switch your Fax/Modem to the modem mode.

Solution: Set your modem to 1200 Baud and then try to connect with the unit. Sometimes noisy lines will prevent a stable connection at 2400 Baud.

Solution: Try removing any devices connected to the phone line at the site or at the host modem site, such as Fax Machines, Answering Machines, Caller ID devices. Most all telephone devices have isolation transformers that may cause reflections or echoes on the line that may corrupt the transmission of the data..

Problem: Compressed mode download seems to work properly but no decompression program is mentioned.

Solution: If this is important to your application, please call us at 1-800-240-4637.

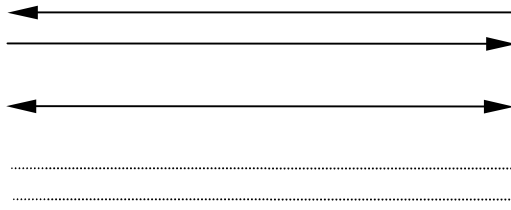
Appendix A - RS232 Pin Outs

9 PIN CONNECTIONS

When the serial port is configured to “No Flow Control,” only **Transmit, Receive, and Ground** connections are required. Pin 7 and Pin 8 need to be connected only if other serial flow control types are selected.

Computer DB9/M Serial Port

Pin 1 (Carrier Detect)
 Pin 2 (Receive)
 Pin 3 (Transmit)
 Pin 4 (Data Term. Ready)
 Pin 5 (Ground)
 Pin 6 (Data Set Ready)
 Pin 7 (Request to Send)
 Pin 8 (Clear to Send)
 Pin 9 (Ring Indicator)



Monitoring Unit DB9/F

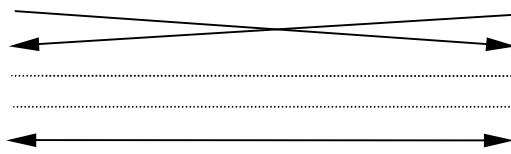
Pin 1 (No Connection)
 Pin 2 (Transmit)
 Pin 3 (Receive)
 Pin 4 (No Connection)
 Pin 5 (Ground)
 Pin 6 (Control Line between Units)
 Pin 7 (Internal Connection)
 Pin 8 (Internal Connection)
 Pin 9 (No Connection)

25 PIN CONNECTIONS

If connecting to a 25 pin serial port on the computer, we suggest using a 9 to 25 pin serial adapter. The pin outs on a 25 pin serial port are not the same as a 9 pin port. When the serial port is configured to “No Flow Control”, only **Transmit, Receive, and Ground** connections are required. **Request to Send** and **Clear to Send** connections will need to be connected only if other serial flow control types are selected.

Computer DB25/M Serial Port

Pin 2 (Transmit)
 Pin 3 (Receive)
 Pin 4 (Request to Send)
 Pin 5 (Clear to Send)
 Pin 7 (Ground)



Monitoring Unit DB9/F

Pin 2 (Transmit)
 Pin 3 (Receive)
 Pin 7 (Internal Connection)
 Pin 8 (Internal Connection)
 Pin 5 (Ground)

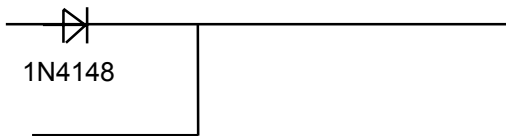
APPLICATION NOTES

Pin 6 is connected only between multiple Whozz Calling? units and acts as a control line. When units are not transmitting data this line resides at -9 VDC. Upon transmit, the unit pulls this line to +9 VDC. Other Whozz Calling? units connected will detect this as a busy condition and will not transmit until the line returns to -9 VDC.

If your application program is designed to perform software controlled real time call blocking/passing it is important that the Pin 6 control line is at the very least, monitored for the busy condition. Since units cannot transmit and receive data at the same time, any commands that are issued by the software must be sent while units are not transmitting. The best solution is to monitor the control line on Pin 4 and pull it high with Pin 6 when your software is transmitting. This method will assure that commands sent to units will get through. This line should be pulled high by your serial port through a standard 1N4148 diode as diagrammed below.

Computer 9 Pin Serial Port

Pin 6 (Data Set Ready)
 Pin 4 (Data Terminal Ready)



CallerID.com Female DB9

Pin 6 (Control Line)

Appendix B - Requirements and Compatibility

COMPUTER REQUIREMENTS

The unit must be connected to a dedicated serial port (either 9 or 25 pin) on your computer that is free of COM port and Interrupt (IRQ) conflicts. It is not required that the serial port reside on any particular COM number or IRQ value. This is important only to application software that you may be running in conjunction with the unit. The requirements for computer CPU speed, disk drive space, memory, and operating system are determined by the software application you are running.

PHONE LINE COMPATIBILITY

The unit should be connected to the telephone lines coming into your building commonly know as the Central Office or “CO” lines. These lines are otherwise referred to as flat rate, local loop, or 1FB lines. The unit can also operate on analog Centrex™ lines. In order to operate the unit on trunk lines (otherwise know as “ground start” lines) you will have to contact CallerID.com to swap your unit for a current detection model. The unit will not work connected directly to digital Centrex™, T1, or ISDN lines. If you have an ISDN interface hardware that has analog telephone outputs, outbound monitoring is possible but only with a current detection unit. Also, with a current detect unit you can monitor outbound calls if the unit is placed on analog extensions from a telephone switch. See Table 1 for telephone line type compatibility.

Table 1 - Phone Line Compatibility

Depending on the type of phone line, the unit may be compatible with Caller ID and outbound call monitoring, or just outbound call monitoring only. The unit senses On/Off Hook by detecting the telephone line voltage levels. If the voltage levels are not in standard local loop ranges, the unit can be replaced with a current detection model by CallerID.com to detect On/Off Hook by means of current flow through the device

	Caller ID Capture	Outbound Calls	On/Off Hook Detect
Standard Local Loop (1FB)	Yes	Yes	Voltage or Current
Analog Centrex	Yes	Yes	Voltage or Current
Ground Start (Trunk)	Yes	Yes	Current Only
ISDN Interface w/ Analog Ports	Yes, if interface generates <u>analog</u> Caller ID	Yes, through analog ports only	Current Only
Switch Analog Extensions	No	Yes	Current Only
Switch Digital Extensions	Not Compatible	Not Compatible	Not Compatible
ISDN, T1, Digital Centrex	Not Compatible	Not Compatible	Not Compatible

Phone line. This signal can be sent directly from the phone company or certain types of isdn in order to capture caller id, an analog caller id signal must present on the interface units can regenerate digital caller id data as analog caller id signals to its analog ports. Analog caller id will not pass through telephone switches to extension lines. Even caller id compatible telephone switches do not pass or regenerate analog caller id signals to extensions lines. This unit will not operate if directly connected to digital phone lines or digital extensions.

Appendix C - Using Hyperterminal In Windows to Monitor Unit

RUNNING HYPERTERMINAL

1. Make sure that any software program that runs in conjunction with “Whozz Calling?” is closed.
2. Select “Start”, then “Accessories”, then “Communications”, then “**Hyperterminal**”.
3. Double Click on “**Hypertrm.exe**”.
4. In the Connection Description dialog box Type: “**Test**” on the Name line and Select: **OK**
5. In the Phone Number dialog box leave phone number blank and Select: Connect using **Direct to COMx**. Where “x” represents the COM port number being tested (ex. 1,2,3, etc.). Select: **OK**
6. In the Properties dialog box Select Bits per second: **9600**, Data bits: **8**, Parity: **None**, Stop bits: **1**, and Flow Control: **None**. Then Select: **OK**
7. Select: **File/Properties**. In the Test Properties dialog box select the **Settings** tab and set Emulation to **ANSI**.
8. Type capital “V”.
 - a. If a string is returned similar to: “V7.5 ECXUDASOBKT L=01 00/00 00:00:42 , the serial port is functioning properly and the unit will display information through hyperterminal.
 - b. If you do not see a similar string, Select: **Call/Disconnect**. Select **File/Properties**, choose another COM port and click **OK**.
 - c. Select: **Call/Connect** and type capital “V” again. Repeat above as necessary until the above string appears.
9. If you obtain a positive result, skip to the section entitled “Capturing Data in a Terminal Program to a Text File.” If not, go to the section entitled “Loopback Test for a Serial Port in Windows” to test if your serial port is transmitting and receiving properly.

LOOPBACK TEST FOR A SERIAL PORT CONNECTION IN WINDOWS

1. Make sure that any software program that runs in conjunction with “Whozz Calling?” is closed.
2. Select “Start”, then “Accessories”, then “Communications”, then “**Hyperterminal**”.
3. Double Click on “**Hypertrm.exe**”.
4. In the Connection Description dialog box Type: “**Test**” on the Name line and Select: **OK**
5. In the Phone Number dialog box leave phone number blank and Select: Connect using **Direct to COMx**. Where “x” represents the COM port number being tested (ex. 1,2,3, etc.). Select: **OK**
6. In the Properties dialog box Select Bits per second: **9600**, Data bits: **8**, Parity: **None**, Stop bits: **1**, and Flow Control: **None**. Then Select: **OK**
7. Select: **File/Properties**. In the Test Properties dialog box select the **Settings** tab and set Emulation to **ANSI**. Select **ASCII Setup** and make sure that Echo typed characters locally box is not checked. Select: **OK** to close and **OK** again to close the Test Properties box.
8. Disconnect the serial cable from the unit, and attach the Loopback Connector to the to the cable (the other end is connected to the serial port on the PC).
9. Type any character.
 - a. If the character you typed shows on the screen, the serial port is functioning properly, the test is positive.
 - b. If you do not see the character typed, Select: **Call/Disconnect**. Select **File/Properties**, choose another COM port and click **OK**.
 - c. Select: **Call/Connect** and type any character again and repeat above as necessary.

NOTE: If a fax/modem board is installed in your computer, the Loopback test performed on this COM port will give a false positive result. You can check to see if the FAX/modem is on the COM port your testing by typing “AT” and pressing the “Enter” key. A FAX/modem will return “OK”.

10. If you obtain a positive result, go to “Loopback Test Successful”. If not, you may have a conflict between your serial port settings and an internal device such as a FAX/modem. Consult your computer technician to resolve the conflict.

LOOPBACK TEST SUCCESSFUL

After a successful Loopback test, reconnect the unit and type a capital “V” (Shift “V”). The unit will respond with the firmware version number, setup toggles, line number of the first channel, and date & time. The unit is now communicating with the serial port. Note the COMM port number to which you are directly connected.

Make a test phone call on each of the phone lines. If the phone call data appears on your screen, most likely the phone lines are connected correctly and the unit is working properly.

If you are using application software, exit your terminal program and run your application software again. If phone call data still does not appear in you application software, determine whether the software can be manually configured to the correct COMM port. Contact your application software provider if problems still persist.

CAPTURING DATA IN A TERMINAL PROGRAM TO A TEXT FILE

Monitoring the output from the unit in a terminal program does not save data unless you capture it to a text file. If not captured, the data that scrolls off your screen is lost. When you enter your terminal program you must immediately set it to capture data to a file. Since terminal programs can be set to append data to an existing text file, you can capture data to the same file every time you run your terminal program. Below are instructions on how to start capturing data to a text file for three specific terminal programs. If you are using another terminal program refer to its help instructions.

From the terminal screen:

Procomm Plus for DOS - Press Alt-F1, type text file name

Windows Hyperterminal - Select: Transfer/Capture Text, and type text file name

Appendix D - Installation Directions

The Whozz Calling? and Scout monitoring units capture all details of inbound and outbound calls and delivers this information to a computer.

The monitoring unit is designed to collect call data from standard telephone lines (trunk or CO lines) coming into your building. It will not work properly if connected to extensions (or station) lines coming from a telephone switch. Connect the unit only to standard local loop start or analog Centrex™ phone lines. It is not designed for ISDN, T1, DID, Digital Centrex, or Ground Start lines

The unit connects to your computer through a serial port. The serial port must be free of COM Port and IRQ conflicts and dedicated to the monitoring unit. The unit can work with any serial port regardless of the COM number and/or IRQ it is using. Multiple Whozz Calling? units can be connected together (daisy chained) in order to monitor up to 40 telephone lines on one serial port. Whozz Calling? with Memory and Scout unit cannot be daisy chained.

OVERVIEW OF CONNECTIONS

Phone lines are connected to the back of the unit using modular jacks. Input and output ports are provided for wiring systems using either 2 wire connections (RJ11 > 1 phone line per phone cord) or 4 wire connections (RJ14 > 2 phone lines on one phone cord). If the wiring coming into your building does not terminate in modular jacks, contact your telephone vendor to add modular connections.

The supplied six foot, 9 pin serial cable connects the unit to an available serial port on the computer. If the computer has a 25 pin serial port, a 9 to 25 pin adapter can be purchased at any computer or Radio Shack™ store. Additional monitoring units are connected to one another using the same type cable. Please refer to page 15 for more information on connecting multiple units.

CONNECTING TO COMPUTER

You may have purchased a software package designed to work in conjunction with the Whozz Calling? unit. The software may have a built-in automatic search and find function. This routine will search all COM and IRQ numbers in an attempt to determine settings for the serial port with which the unit is connected. If an error message indicates that the software cannot communicate or “find” the unit, you will need to run the Loopback Test to determine if there exists communication port conflicts within you computer. If your software requires a manual selection of the COM and/or IRQ settings, the Loopback Test is also helpful in determining these parameters.

The unit should be connected to the serial port, placed in a convenient location next to the computer, and your software installed. Permanent installation and phone line connections can be made once communications between the software and hardware is established. Plug in the power to the unit and run the software. Phone lines need not be connected at this time. The software will either communicate with the unit connected to the computer or display a message indicating no communication.

If a no communication error is indicated and your software has an automatic search function, it has tried to communicate with the unit using every combination of COM and IRQ numbers. The serial port is probably not configured correctly and chances are the COM port number and/or IRQ number defined for the serial port conflicts with another device such as an internal FAX/ modem. If an auto-search function is not performed within the software, the COM and/or IRQ numbers must be set manually. Enter different combinations of COM and/or IRQ numbers to establish communication. If unsuccessful, use the Loopback Test to help determine whether communication conflicts reside in your computer.

To determine whether a serial port is configured and working properly use HyperTerminal in Windows and Loopback test procedure.

Loopback Test for a Serial Port Connection in Windows

1. Make sure your software program that runs in conjunction with Whozz Calling? is closed.
2. Run **HyperTerminal** from the Accessories Program Group.
3. In the Connection Description dialog box Type: “**Test**” on the Name line and Select: **OK**
4. In the Phone Number dialog box leave phone number blank and Select: Connect using **Direct to COMx**. Where “x” represents the COM port number being tested (ex. 1,2,3, etc.) Select: **OK**
5. In the Properties dialog box Select Bits per second: **9600**, Data bits: **8**, Parity: **None**, Stop bits: **1**, and Flow Control: **None**. Then Select: **OK**
6. Select: **File/Properties**. In the Test Properties dialog box select the **Settings** tab and set Emulation to ANSI. Select **ASCII Setup** and make sure that Echo typed characters locally box is not checked. Select: **OK** to close and **OK** again to close the Test Properties box.
7. Disconnect the serial cable from the unit, and attach the Loopback Connector to the to the cable (the other end is connected to the serial port on the PC).
8. Type any character.
 - a. If the character you typed shows on the screen, the serial port is functioning properly, the test is positive.
 - b. If you do not see the character typed, Select: **Call/Disconnect**. Select **File/Properties**, choose another COM port and click **OK**.
 - c. Select: **Call/Connect** and type any character again and repeat above as necessary.
9. If you obtain a positive result, close HyperTerminal and run the your software again. If not, you may have a conflict between your serial port settings and an internal device such as a FAX/modem. Consult your computer technician to resolve the conflict.

CONNECTION TO PHONE LINES

There are two basic methods of connecting the monitoring unit to your phone lines: the series (pass through) connection, or the parallel (branch off) connection. The series connection uses both input and output modular jacks on the unit. The parallel connection uses only the input jacks.

Series Connection

Connecting the unit in series allows the use of the first ring suppression feature. Since the Caller ID signal is sent on the telephone line between the first and second ring, suppressing the first ring will prevent the call from being answered before the Caller ID data is sent. A series connection allows the user to have the option of suppressing the first ring simply by selecting it in the software.

Figures 2a & 2b show series connections. Each phone line to be monitored passes through the unit. Phone lines coming into the building connect to the input jacks on the unit (through bare wire to modular adapters, if needed). Lines connected to the output jacks continue to the desktop phones (through a phone switch, if present).

Parallel Connection

A parallel phone line connection is often easier since the incoming lines to the building need only "branched off" to the unit. The unit can monitor the telephone activity simply by being connected to the phone lines of interest. With this connection only the input ports on the unit are used.

Figures 3a & 3b show parallel connections. This involves branching off or "tapping" from each phone line to be monitored and connecting them to their respective input jacks on the unit (through bare wire to modular adapters, if needed). As mentioned above, this method of connection does not provide for first ring suppression capability.

2-Wire (RJ11) or 4-Wire (RJ14) Phone Cord Connections

Most modular phone cords contain 4 wires which can handle two phone lines (2 wires for each line.) Your system may have either 2 of the wires connected (RJ11 - 1 phone line) or four wires connected (RJ14 - 2 phone lines). The modular connectors on the unit are equipped to handle either arrangement. They are marked similar to the modular connectors on a 2 line phone. For example, Channel 1 is marked "L1 or L1/L2". L1 is for a 2-wire phone cord and L1/L2 is for a 4-wire phone cord. Please refer to Fig. 1.

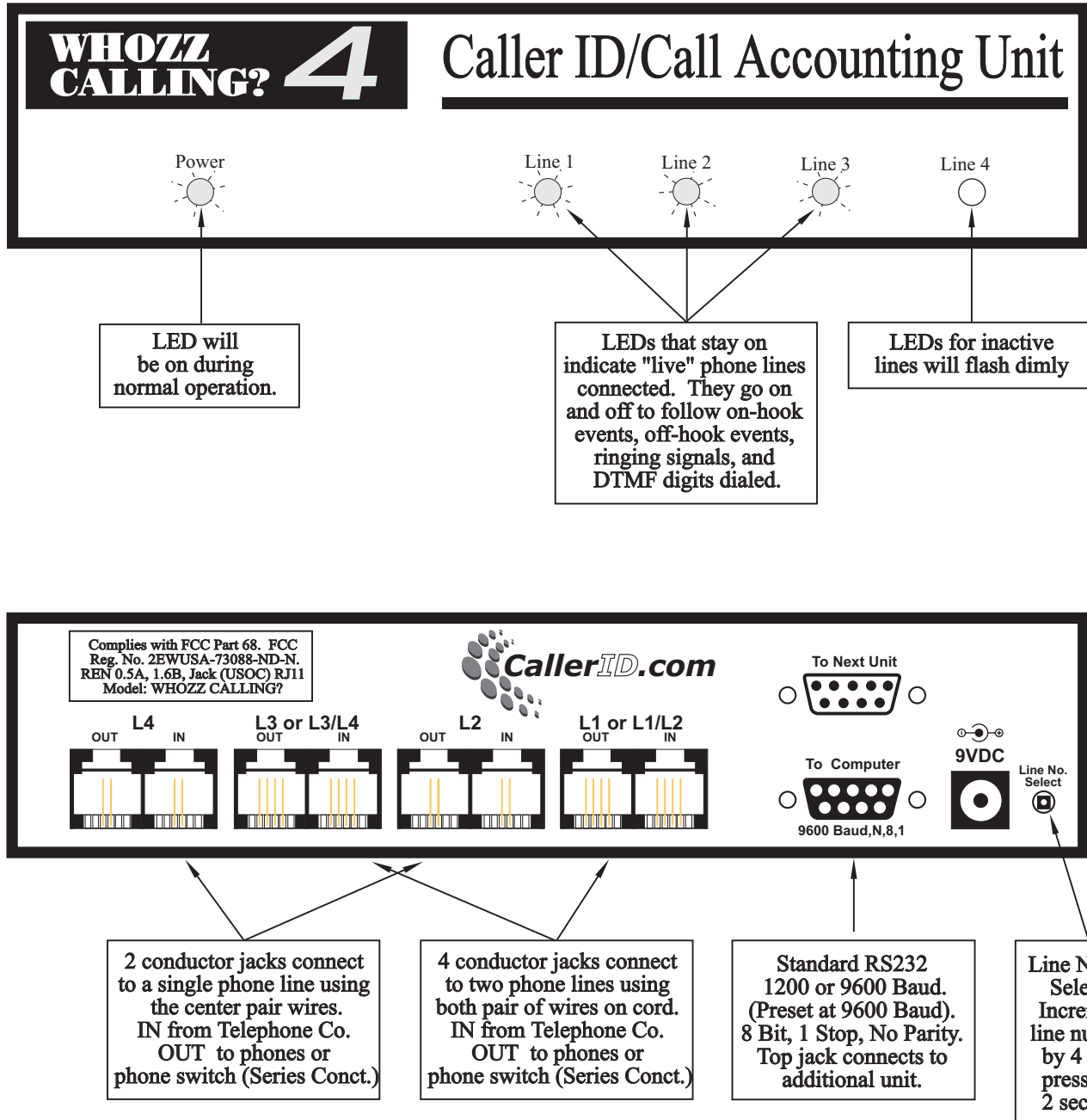
For a 2-wire (RJ11) system one phone cord simply plugs into each channel on the unit. Caution must be observed when connecting a 4-wire (RJ14) system. Phone cords must only be connected to channels 1 and 3. To prevent crossed telephone lines, do not connect phone cords to channels 2 and 4 on a RJ14 system.

If you are unsure whether your system is 2 wire or 4 wire a quick check can be made using the unit. First, power on the unit. Connect one cord to the input of channel 1. If only the Line 1 light comes on, you have a 2-wire (RJ11) cord. If both Line 1 and Line 2 lights come on, you have a 4-wire (RJ14) cord. Continue checking the rest of your cords in this manor.

MOUNTING HARDWARE

A one inch wide black plastic mounting bracket is used to attach the unit to a wall or phone board. Remove the two Phillips head screws on the bottom of the enclosure and attach the bracket to the unit with the same screws. Mount on wall using appropriate hardware.

Fig. D1 Front and Back Views of Whozz Calling? 4 Line Model



(Current Detection units must be connected in Series)

Fig. D2a Series Connection for 2-Wire (RJ11) system

Lines coming into the building from the telephone company are connected to the input jacks on the monitoring unit. If these lines do not terminate in modular connectors, solid wire to modular adapters need to be installed. The output lines from the unit go to the desktop phones. If a telephone switch is present, they connect through the switch first.

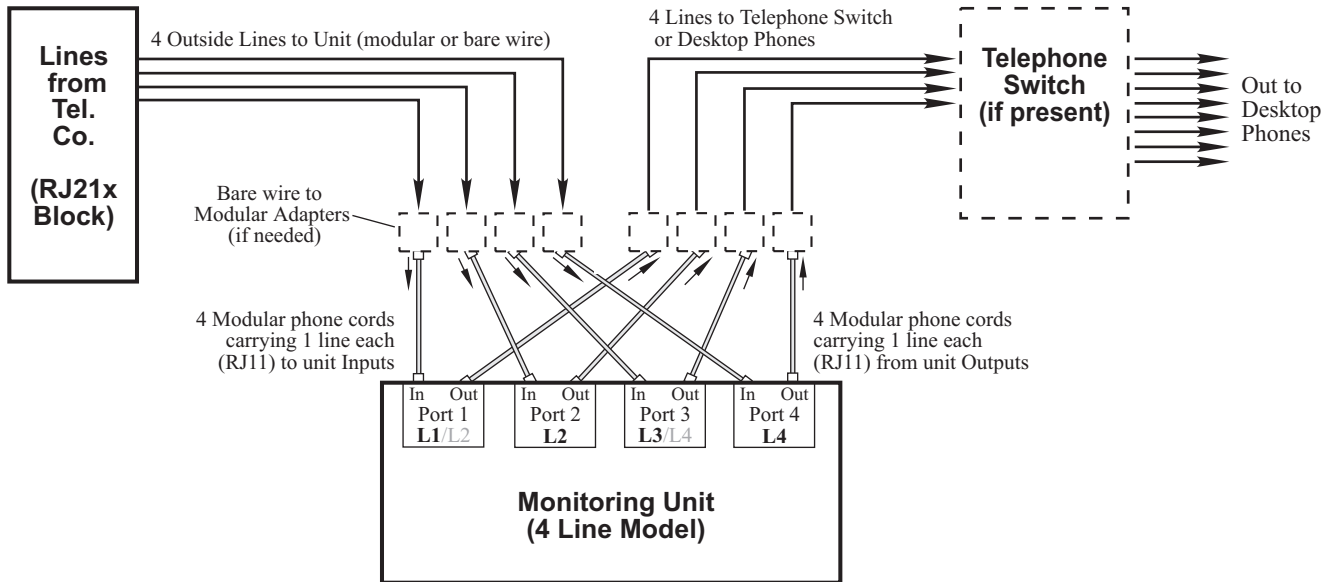
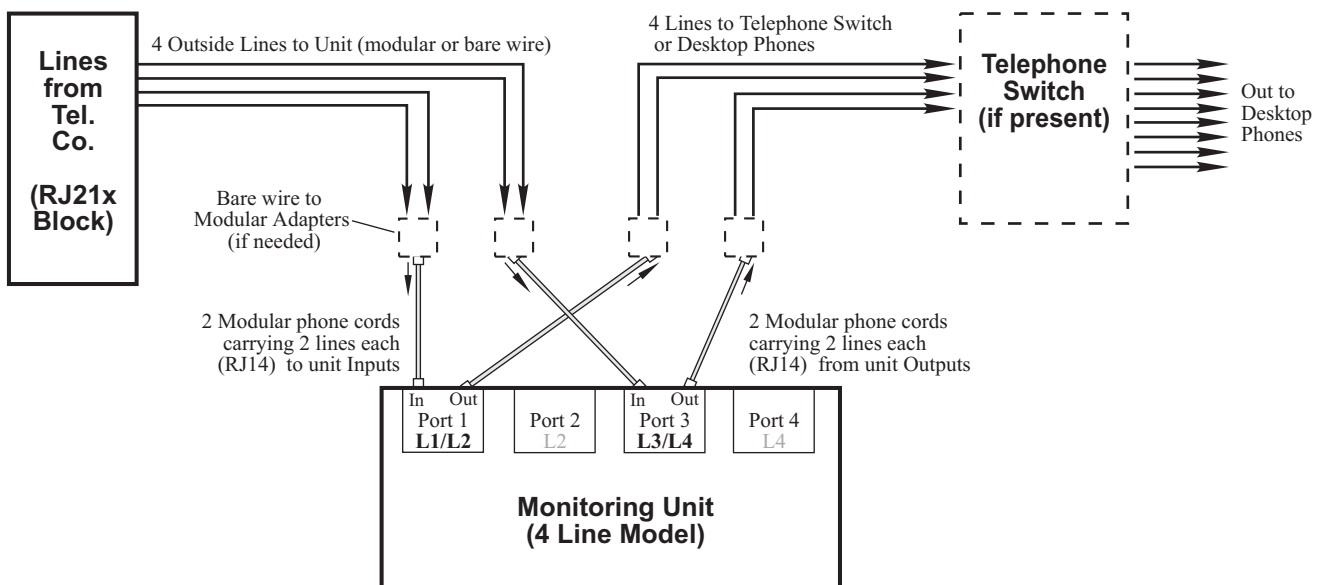


Fig. D2b Series Connection for 4-Wire (RJ14) system

In a 4-wire (RJ14) system each phone cord carries 2 phone lines. Notice only 2 cords are connected to the inputs and of the monitoring unit. These cords are connected to Ports 1 and 3. Ports 2 and 4 are not connected.



(Current Detection can not be connected in Parallel)

Fig. D3a Parallel Connection for 2-Wire (RJ11) system

Lines coming into the building from the telephone company are connected to the telephone switch or directly to desktop phones. These lines are branched (or tapped) so that they can be connected to the input jacks of the monitoring unit. If these lines are not modular, solid wire to modular adapters need to be installed. The output lines on the unit are not connected.

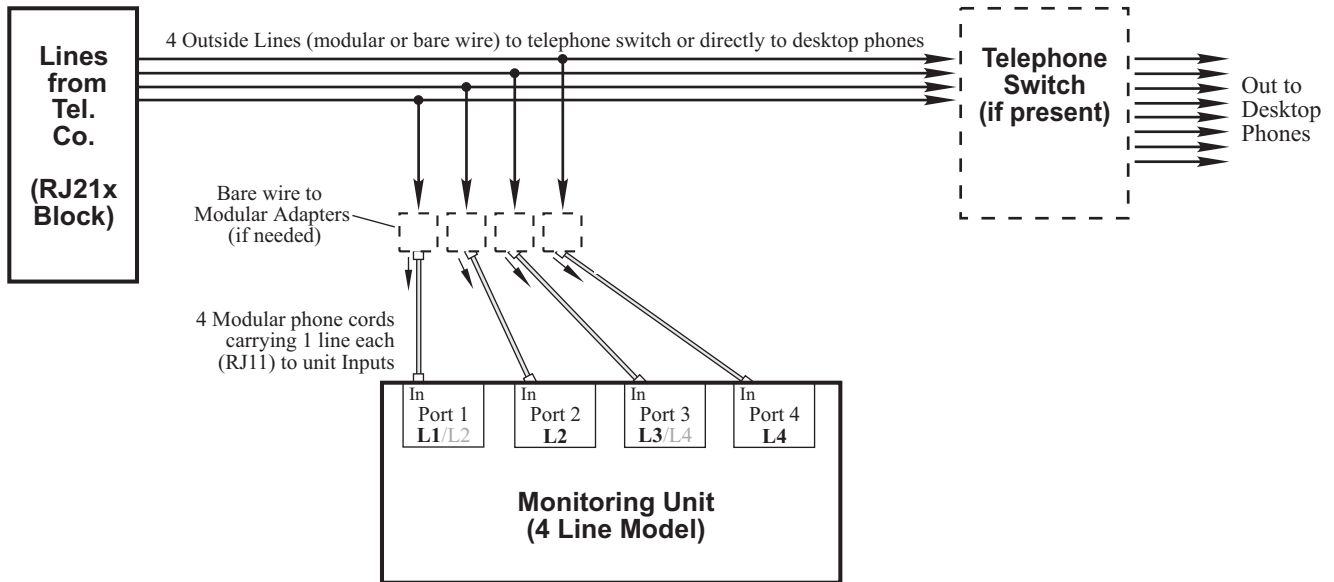
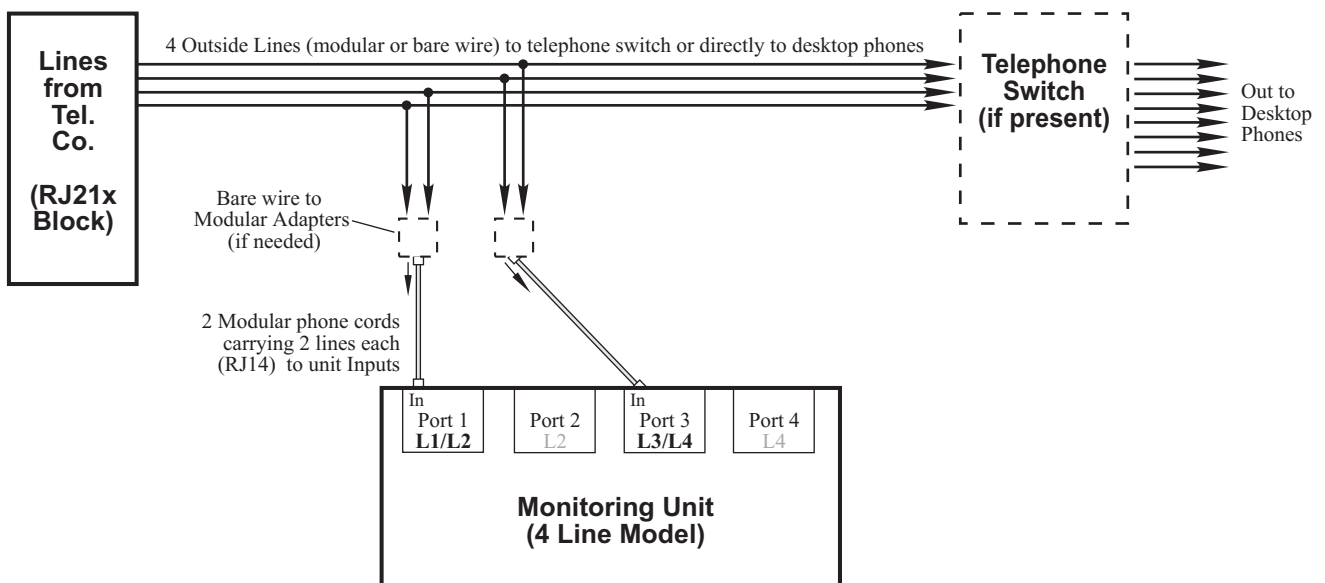


Fig. D3b Parallel Connection for 4-Wire (RJ14) system

In a 4-wire (RJ14) system each phone cord carries 2 phone lines. Notice only 2 cords are connected to the monitoring unit inputs. These cords are connected to Ports 1 and 3. Ports 2 and 4 are not connected.



DAISY CHAINING MULTIPLE UNITS (*Whozz Calling? without memory units only*)

As many as 6 monitoring units can be connected together to one serial port. Each unit has a line selector switch located on the rear panel. This switch is used to set up additional units for the appropriate line numbers. Each time the switch is depressed for 2 seconds the line numbers on the unit will increase by four. For example, the switch should be pressed once for the second unit to set it for lines 5 through 8. The switch should be pressed twice on the third unit to set it for lines 9 through 12. Additional unit line numbers can be set accordingly.

The switch will set line numbers up to 37-40 and then roll over to 1-4. Loss of power to the unit will not affect line numbers set by the switch. The line numbers set for each unit can be seen in the Terminal program in Windows 3.x or HyperTerminal in Windows 95 by typing capital "V" (for version) in the terminal screen. Each unit connected will respond with the version of the firmware, unit toggle settings, and line number of its Channel 1.

Use the supplied serial cable to connect unit #1 with unit #2. The cable attaches to the unit #1 port marked "To Next Unit" to the unit #2 port marked "To Computer." Unit #2 connects with unit #3 in the same manner.

WARRANTY

CallerID.com will repair this product with new or rebuilt parts, free of charge, when returned freight prepaid to the CallerID.com repair facility in Norcross, GA within 90 Days from the date of original purchase. This warranty is extended only to the original purchaser. A purchase receipt or other acceptable proof of purchase date will be required before warranty service is rendered.

This warranty covers failures due only to defects in materials or workmanship occurring during normal use. It does not cover damage which occurs in shipment; failures which are caused by products not manufactured by CallerID.com; failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, modification or unintended use of product; service by anyone other than an authorized CallerID.com repair facility; or damage attributed to an act of God. Lightning is considered an act of God. CallerID.com makes no other warranty, either expressed or implied, with respect to this product.

If a problem develops concerning this product, contact your local dealer or CallerID.com directly for a Return Material Authorization (RMA) number. A RMA number is required for all returns.

FCC INFORMATION

This unit is designed to conform to federal regulations and complies with Part 68 of the FCC rules. On the back of this equipment is a label that contains the FCC registration number and ringer equivalence number (REN) for this equipment. Upon request, you may have to provide the FCC registration number and the REN to your telephone company.

The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the REN's on any one line should not exceed 5. If too many devices are attached, your phones may not ring properly and other devices on the line may not detect the ring signal.

In the most unlikely event that your unit causes significant problems on the telephone line, the telephone company can disconnect your service. The telephone company will attempt to notify you in advance and will advise you of your right to file a complaint with the FCC.

The telephone company may make changes in its technical operation and procedures that may affect the operation of this device. The telephone company is required to give adequate notice of such changes. This product should not be connected to coin operated or party line systems.



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