

ProTalk Alarm Reporting Unit
Operating Manual

***BE* BARNETT ENGINEERING LTD.**

ProTalk Alarm Reporting Unit

Operating Manual

Model B1270

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 BARNETT ENGINEERING LTD.

FCC/IC Customer Instructions

The ProTalk Model B1270 ARU meets and exceeds the necessary requirements for operation and connection to a PSTN telephone line in Canada and the United States. It currently holds the following approvals:

1. FCC part 15, subsection J/A
2. Industry Canada CS-03 Part I Issue 7
3. FCC Part 68
4. CSA C22.2-225-M90 (complies with UL1459)

Federal Communication Commission Regulations

1. This equipment complies with Part 68 of the FCC rules. On the side of this equipment is a label indicating, among other information, the FCC registration number and ringer equivalence (REN) for this equipment. If requested, this information must be provided to the telephone company.

2. The total number of all ringer equivalence numbers on any one line should not exceed 5.0 in most cases. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

3. This equipment complies with the requirements in part 15 of FCC rules for a "Class A" computing device. Operation of this device in a residential area may cause unacceptable interference to radio and television reception, which may require the operator to correct the problem at his own expense.

4. If the ProTalk model B1270 causes harm to the telephone network, the telephone company will notify you in advance that a temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

5. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

6. If trouble is experienced with the B1270, please contact Barnett Engineering LTD., 215 7710 5th Street SE, Calgary, Alberta, Canada T2H 2L9 for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you remove the equipment from the network until the problem is resolved.

7. Repair work on this device must be performed by Barnett Engineering Ltd.

8. This device must not be installed on coin-operated or multi-party telephone lines.

15.818 Class A Computing Device

Warning: This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Sub-part J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

Industry Canada Regulations

Note: The Industry Canada label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas. *Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.*

The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total load numbers of all the devices does not exceed 100.

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Introduction

Description

Basic Operation

The ProTalk model B1270 is a device used to monitor alarms at an unattended site. If an alarm occurs, such as building intrusion, power failure, high or low temperature or equipment failure, the B1270 automatically dials out on the telephone line. When the telephone is answered, the B1270 announces in a clear voice the name of the site and the alarm condition that has occurred. If there is no answer, the B1270 will continue to dial through a list of telephone numbers until it reaches someone and is able to report its alarm.

This describes the basic operation of the ProTalk model B1270, and its most common application. The B1270 can, however, be programmed to perform many more functions at the discretion of the user. It can announce alarms over radio, telephone, a public address system or a combination of these. It can also be programmed to send coded tones along with the voice messages to activate such devices as radio pagers, relays or annunciator panels. It can be used as a master station to concentrate alarms from a number of remote sites. It can be commanded to perform remote control functions by sending codes from a tone telephone. Expanders can be added to increase the capacity of the unit from the basic eight alarm inputs and four relay outputs up to 64 inputs and 32 outputs.

The B1270 can be completely customized for your application because all of the operating parameters are programmed by the user, including the voice messages. Yet for all its sophisticated features, the B1270 is simple to program using a standard tone telephone. A stored voice in the B1270 prompts you step-by-step when you are entering new voice messages or codes, and speaks back all the values that you have saved.

How to Use this Manual

This manual is organized in such a way that if you want the B1270 to function with its default settings as a simple telephone dialer, you need only read the first two chapters of the manual covering the physical installation, basic programming and operation. If you wish to change some of the default settings or have the B1270 perform more advanced functions, continue on to the next chapter where the Program Codes are described in detail. Several step-by-step examples of programming the B1270 into different configurations are given. The final chapter describes some of the problems most commonly experienced when the B1270 is first installed, and gives advice on troubleshooting.

Getting Started

Description

The B1270 comes in two versions. One is a card suitable for mounting in a standard Telcom card cage, 5.5" high. It contains a 56 pin card edge connector with 0.156" spacing. The pin-out of the rear connector is shown in the following table:

Table 1: Connections to the 56 pin card edge connector

COMPONENT SIDE	SOLDER SIDE
1 Phone Tip	2 Phone Ring
3	4
5 Relay 1 N.O.	6 Relay 1 N.C.
7 Relay 1 Common	8 Relay 2 Common
9 Relay 2 N.O.	10 Relay 2 N.C.
11 Relay 3 N.O.	12 Relay 3 N.C.
13 Relay 3 Common	14 Relay 4 Common
15 Relay 4 N.O.	16 Relay 4 N.C.
17 reserved	18 reserved
19	20 Alarm 1 Input
21	22 Alarm 2 Input
23	24 Alarm 3 Input
25	26 Alarm 4 Input
27	28 Alarm 5 Input
29	30 Alarm 6 Input
31	32 Alarm 7 Input
33 Alarm V+	34 Alarm 8 Input
35	36
37 +12 VDC	38 +12 VDC
39 GND	40 GND
41 Ack Input	42
43 Expander (Serial)	44 Test Input
45 PTT Output	46
47 COS Input	48
49 Radio Rx	50 Rx WL
51 Radio Tx	52 Tx WL
53 Microphone Input	54
55 Speaker +	56 Speaker -

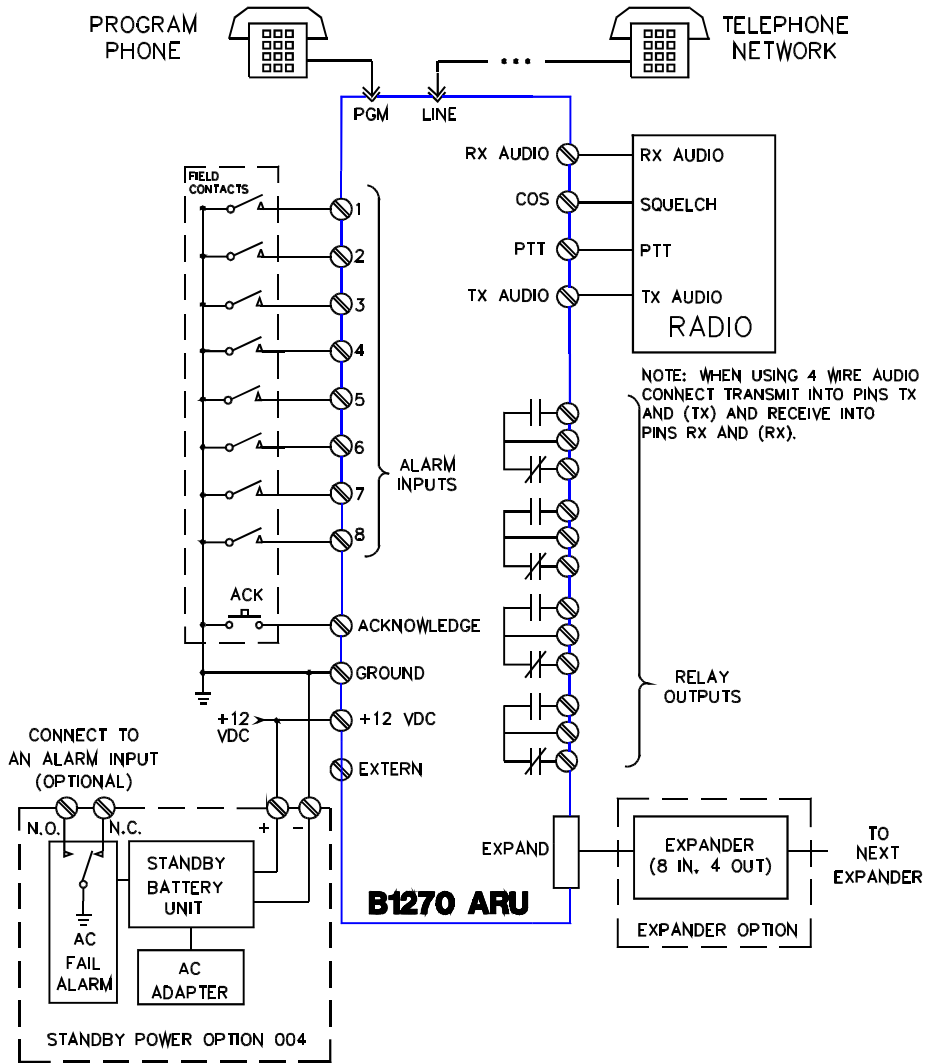


Figure 1

Connections to the ProTalk B1270 in an Enclosure

The other version comes in its own enclosure and can be mounted anywhere that is suitable for electronic equipment. Connections, shown in Figure 1, are made to screw terminals on the rear of the box which are clearly labeled with their functions.

Power Requirements

The B1270 will operate from a supply of +11.5 VDC to +16 VDC. The typical current requirement is 70 mA plus 25 mA per relay. Each expander uses an additional 60 mA plus 25 mA per relay.

If you operate the B1270 from an AC adapter, connect a jumper wire from the EXTERN pin to the +12 V pin on the back of the unit.

Installation

The B1270 should be installed in a clean, dry place suitable for electronic equipment. The unit will operate from -20°C to +60°C.

Caution: +12 VDC and the telephone line should not be connected until the rest of the installation is complete. If using the card mount version of the B1270, do not plug it in and out of the card cage with power applied.

Use a small flat blade screwdriver to make the following connections to the screw terminals on the back of the enclosure.

Alarms

In its default condition, the B1270 looks for a normally open (NO) contact which closes to ground to indicate an alarm. The B1270 may also be programmed to accept inputs normally closed (NC) to ground which open on an alarm condition. To change this parameter, refer to the alarm format in Advanced Configurations (Program Code 6). When using NC contacts, ensure that all unused alarm points are connected to ground.

All of the alarm inputs are optically isolated and normally utilize the B1270's internal 12 V supply. However, the alarms may be isolated by cutting J1 and connecting an external supply to the point labeled ALARM+ (pin 33).

Connect the alarm inputs to the positions labeled ALARM 1 through ALARM 8 on the rear terminal block (even pin numbers 20 through 34 on the card connector).

Caution: DO NOT connect a voltage source to the alarm inputs.

Relays

Four form C relay outputs are available, rated for 0.3 A at 110 VDC, 1.0 A at 30 VDC, or 0.3 A at 120 VAC. Connect external devices to the labeled contacts for RELAY 1 through RELAY 4 on the rear connector. When connecting to larger loads, connect an interposing relay between the B1270 and the load.

Radio

If the alarms are to be announced over radio, connect TX to the transmit audio of the radio, and RX to the receive audio. *RX should always be connected to squelched audio.* Adjust the level of the transmit audio to between -20 and 0 dBm using the TX LEVEL pot on the front panel. Adjust the receive audio in the radio to a level between -20 and 0 dBm.

When connecting to a 4-wire interface on a radio (or other 600 ohm balanced port), TX and (TX) are used for transmit, RX and (RX) for receive. This option must be specified at the time of ordering.

The PTT output provides an ground closure through an open collector to signal the radio to transmit. Connect this point to the radio's push-to-talk circuit. The maximum rating is 150 mA, 40 V.

The COS input is used to indicate to the B1270 whether the radio channel is busy. Connect this point to the output of the radio's carrier-operated switch or relay (COS or COR). In its default condition, the B1270 looks for a high signal to indicate the channel is clear and a low signal when the channel is busy. The B1270 may also be programmed to recognize the reverse polarity. To change this parameter, refer to the squelch polarity in Advanced Configurations (Program Code 6). To make the COS adjustment, refer to the section "Front Panel - COS Level". This input is internally pulled up to work with open collector outputs in its default program condition (i.e. the input is pulled high when clear and driven low when busy).

Correct level settings in the radio are essential for proper operation of the B1270. Radio levels should be set by a qualified technician.

Local Acknowledge

This input is used to acknowledge an alarm locally at the B1270 without having to call in over the radio or telephone. Connect ACK input (pin 7) to a normally open contact which will be grounded to acknowledge the alarm.

Telephone

The telephone line is connected to the RJ11 jack labeled LINE on the back of the B1270. The line should be using the inner (red/green) pair. Audio levels to the telephone line are fixed internally in conformance with FCC regulations.

The telephone should always be the last item connected.

Caution: DO NOT plug the telephone line into the PGM jack, as damage could result to the B1270.

Expanders

Expanders may be used with the enclosure-mounted version of the B1270. They come in their own metal cases with all connectors clearly labeled. Expanders must be located in close proximity to the master B1270 unit for them to communicate properly. The shielded cables provided to connect between units are cut to accommodate the maximum allowable distance. Substituting cables is not recommended.

Make the alarm and relay connections to the expander in the same way as for the B1270. Use the shielded cable provided to connect between the EXPAND connector on the B1270 and SERIAL IN on the expander. On subsequent expanders, use the cable supplied with the expander to connect between SERIAL OUT on one board and SERIAL IN on the next.

Next set the DIP switches on the expander to configure its ID number.

Expander Number	Position 1	Position 2	Position 3
1	OFF	ON	ON
2	ON	OFF	ON
3	OFF	OFF	ON
4	ON	ON	OFF
5	OFF	ON	OFF
6	ON	OFF	OFF
7	OFF	OFF	OFF

DIP switch positions 4 through 7 must remain on.

Position 8 is used to control the LEDs. It is normally ON, but if you wish to conserve power by disabling the LEDs, set this switch to the OFF position.

If the expander address is changed, the unit must have power removed and then reapplied in order for the master to recognize its new address. All the expander's programmed parameters, aside from the voice messages, will reset to the default parameters when its address is changed, and the unit will have to be reprogrammed. When the expander is powered back up, *Program Code Error* will be announced, indicating that the expander was reset. Only the expander with the changed address will reset. The master and the rest of the expanders will retain their programmed parameters.

The expander requires its own +12 VDC and GND connections. Be sure that all units, master and expander(s), are always powered up and down together. Do not connect or disconnect expander cables when the system is powered up.

The POWER LED lights when the power is on. The expander also has an RX LED which lights when it is being polled by the master B1270, and a RESPONSE LED which indicates when it is responding.

Power-up Sequence

Once the installation is complete, +12 VDC can be connected to the B1270. When power is first applied, the B1270 will go through a self-test, the RECORD LED will flash three times, and the RING LED will strobe to indicate the unit is functioning properly.

To operate the ProTalk from 120 VAC, first connect a jumper wire from the EXTERN pin to the +12V pin on the back of the ProTalk. Connect the AC adapter into the ProTalk unit, then plug the AC adapter into a 120 VAC convenience outlet. The unit will go through its self-test, flash the RECORD LED three times, and strobe the RING LED as described.

The telephone line may then be plugged in as the last connection. *Ensure that the telephone is connected into the LINE port on the B1270.* After powering up, the ProTalk B1270 will continually flash its RING LED to indicate that it is operating properly. This LED becomes solid when ringing is detected. The flashing LED in no way effects the detection of ringing or the operation of the telephone line.

Start-up Programming

Introduction

Now you are ready to begin programming the B1270. When the B1270 is initially powered up, it will prompt you to input three parameters which must be entered before it can operate — the voice messages, a list of telephone numbers and the Acknowledge Code. Once these values have been entered, with its default settings, the unit will function as a straight telephone dialer when an alarm is present. If you require the B1270 to perform more advanced functions, continue on to the chapter where the Program Codes are explained in detail.

Before you start programming, there are a few points with which you must be familiar. First, although it is possible to program the B1270 remotely by calling it up over the telephone line, it is assumed that when you initially install the unit you will be using a local programming phone. The B1270 must be programmed with a phone which sends DTMF tones (known by the registered trademark Touch Tone); it will not recognize the signals from a phone which sends dial pulses.

The B1270 is designed to be user friendly. When you listen in the earpiece of the programming phone, you will hear spoken messages. These are called voice “prompts”, and they tell you what information the B1270 is expecting you to enter. Whenever you program a new value, the B1270 will immediately speak that parameter back to you, so you will know right away whether the code was entered correctly. You can change a parameter as many times as you like before going on to the next one. If you make a mistake, such as entering a value outside the range for that parameter, the B1270 will immediately let you know by announcing *Error*. And if you get confused, just hang up the phone and start again. The B1270 will start again at the beginning when you pick up the handset.

The other feature you must know is how to enter data. If you were entering information from a keyboard or other terminal, you would use the “Enter” key or a “Carriage Return”. A telephone does not have this key, so we substitute the code ** for “Enter”. The two “stars” (asterisks) must be entered one after the other, with no more than one second between the end of the first digit and the beginning of the second. This is a much longer time than most people think, and there is no need to rush when entering the code. If you enter the digits too fast, the telephone will only recognize one *. You may get an *Error* message if this happens or else the B1270 will ignore the entry and wait for another **. The ** code is used throughout the programming sequence to enter information or proceed to the next step. With practice you will soon determine the correct speed.

The B1270 will not start to work until all three of the required parameters have been entered correctly, so if you hang up in the middle of this procedure, the B1270 will take you back to the beginning of the sequence the next time you come off hook.

Throughout the programming sequence, the unit will speak stored parameters using a prompt, followed by the word “is”, then the stored data. For example, to tell you the Acknowledge Code is set to 1234, the B1270 says *Acknowledge Code is 1234*. Input from the telephone’s keypad is expected following this message. Whenever voice messages are required, the unit will beep twice, prompting the user to speak into the telephone handset.

Site ID and Voice Alarm Messages

Plug any standard tone telephone into the jack labeled “PGM”.

Lift the handset to your ear. You will hear the B1270 speak the words *Program voice; site is ...* followed by a noise which sounds like radio static (or there may be a test message from the factory).

B1270: Program voice.
Site is !@#\$\$%^ &

The B1270 is prompting you to enter the name of the site. The name you program will be announced at the start of every message along with the list of alarms.

To record the voice message, enter the record code (2).

YOU: **

After you hit the second star, the B1270 will prompt you with a beep-beep tone.

B1270: beep-beep

As soon as you hear the tone, you have two seconds in which to record your message. The RECORD LED on the front panel will light while the B1270 is recording. Speak the name of the site, e.g. Ajax Compressor Station.

YOU: *Ajax Compressor Station*

As soon as the two seconds are up, the B1270 will repeat the message it has just recorded. The PLAY LED will light while it is playing back.

B1270: Site is Ajax Compressor Station.

Did the message played back sound acceptable? If you think it could be improved, enter the record code (2) followed by** again and repeat the message as many times as you like. Two seconds is usually plenty of time to enter the name as long as you start speaking right away. An exceptionally long name may have to be abbreviated. Once you are satisfied with the way the message sounds, hit the enter code (**).

YOU: **

The B1270 will prompt you for the next entry.

B1270: Alarm number 1 is !@#\$\$%^ &*.

Repeat the above steps to record the alarm message, e.g. power failure.

YOU: **

B1270: beep-beep

YOU: *Power Failure*

B1270: Alarm number 1 is Power Failure.

Repeat the above steps until you are satisfied with the way the message sounds. Then continue.

YOU: **

B1270: Alarm number 2 is !@#\$\$%^ &*.

Enter the voice message associated with the second alarm point, e.g. intrusion alarm.

YOU: 2**

B1270: beep-beep

YOU: *Intrusion Alarm*

B1270: Alarm number 2 is Intrusion Alarm.

YOU: **

B1270: Alarm number 3 is !@#\$\$%^ &*.

Repeat the above steps until all the alarm points have been programmed. When you have entered all the voices, enter Quit (#) at the announcement of the next empty alarm. If you use all eight alarms, the B1270 will automatically advance after you enter the last voice message.

YOU: # **

Telephone Numbers

B1270: Program telephone number.
Directory A telephone number 1 is empty.

The B1270 is prompting you to enter the first telephone number you want the B1270 to dial if an alarm is received. Enter 2 to indicate you want to program a new telephone number.

YOU: 2 **

The B1270 will beep.

B1270: beep

Enter the phone number using the pushbuttons on your telephone. Numbers may be up to 14 digits in length. Long distance numbers are permissible; don't forget to include a "1" before the number or area code.

YOU: 2 5 5 9 5 4 4 **

The B1270 will repeat this number back to you.

B1270: Directory A telephone number 1 is 2 5 5 9 5 4 4.

If there is an error in the number, hit the program code (2) followed by ** and try again. If the number is played back correctly, hit the enter code.

YOU: **

B1270: Directory A telephone number 2 is empty.

The B1270 is prompting you for the second number to dial if it does not receive an answer at the first.

YOU: 2**
B1270: beep
YOU: 2 5 5 2 3 4 3**
B1270: Directory A telephone number 2 is 2 5 5 2 3 4 3.
YOU: **
B1270: Directory A telephone number 3 is empty.

The B1270 is prompting you for a third telephone number to dial if it cannot get an answer at the first two. Continue entering telephone numbers up to a maximum of eight. If you are not using eight numbers, enter the Quit code (#) at the prompt. If you hit the Enter code (**) for an empty telephone number, the B1270 assumes that you have no more telephone numbers to enter and will jump to the next function.

YOU: #** (or **)

Acknowledge Code

B1270: Program Acknowledge Code.
Acknowledge Code is 1234.

The B1270 is prompting you to enter an acknowledge code. This is the code you send to the B1270 when it calls you up to announce an alarm, to acknowledge that you have received the message. Otherwise the unit will keep on dialing. 1234 is the default code. You may use this code or enter a different one from 1 to 8 digits in length. It should be something easy to remember.

YOU: 2 4 6 8**
B1270: Acknowledge Code is 2 4 6 8.
YOU: **
B1270: Beep
Program Access.
Enter Program Code.

The B1270 is prompting you to enter a Program Code if you need to program more advanced functions into the unit. If you require them, proceed to the chapter where Program Codes are explained in detail. Otherwise, hang up the programming phone.

At this point the B1270 will function as an alarm reporting unit over the telephone, dialing through the numbers you have programmed into the directory until it is answered, then announcing the voice messages you have recorded to report an alarm.

Unless something happens to corrupt the memory of the B1270, these parameters will be stored indefinitely and you will not be prompted to enter them again. On-board battery back-up will store the programming for ten years or more without power applied.

The next time you lift the programming phone off hook, the B1270 will announce its status and prompt you to *Enter Control Code*. DO NOT enter any codes from the telephone. WAIT five seconds; the ProTalk will time out and automatically enter the programming mode. When you hear the prompt *Program Access; Enter Program Code*, you may begin programming.

Front Panel

The front panel of the B1270 is shown in the following drawing. The description of the front panel controls and indicators will assist you in verifying the correct operation of the unit.

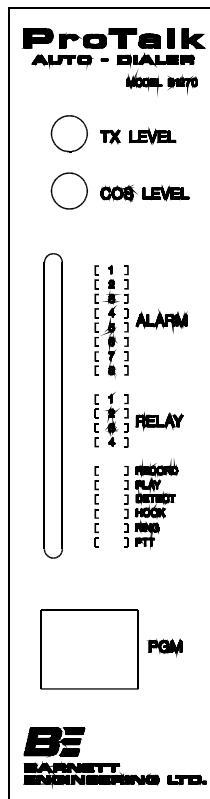


Figure 2

ProTalk Front Panel

TX Level

This single-turn pot is used to set the level of the transmit audio to the radio. Adjust the level to between -20 and 0 dBm as measured at the RADIO TX terminal on the rear of the B1270.

COS Level

This single-turn pot adjusts the level presented by the radio's carrier-operated switch (COS) to indicate a busy channel. In its default condition (0), the radio expects a high signal when the channel is clear and a low when the channel is busy. The B1270 may be programmed to recognize the reverse polarity by setting the squelch polarity to 1. To change this parameter, refer to the squelch polarity in Advanced Configurations (Program Code 6).

To set the COS level, perform the following:

0 - TX ON HIGH (default) - Start with the pot adjusted fully clockwise. With the radio not receiving carrier, generate an alarm and check that the associated message is transmitted over the radio. If the unit does not transmit, turn the pot counter-clockwise until the radio starts to transmit, then turn it slightly past that point. Then key another radio in the system so that the channel is busy (receiving carrier). Create another alarm. The B1270 should wait for a clear channel, or else time out after one minute and then transmit. If it does not wait, adjust the pot back a small amount clockwise.

1 - TX ON LOW - Start with the pot adjusted fully counter-clockwise. With the radio not receiving carrier, generate an alarm and check that the associated message is transmitted over the radio. If the unit does not transmit, turn the pot clockwise until the radio starts to transmit, then turn it slightly past that point. Then key another radio in the system so that the channel is busy (receiving carrier). Create another alarm. The B1270 should wait for a clear channel, or else time out after one minute and then transmit. If it does not wait, adjust the pot back a small amount counter-clockwise.

Alarm LEDs

The alarm LEDs light when the associated alarm input is grounded. With the default programming (NO contacts), this represents an alarm condition.

If the B1270 is programmed for NC contacts which remove the ground when an alarm is present, the LEDs would normally be lit and an LED going out would indicate an alarm.

Relay LEDs

The relay LEDs light whenever the associated relay is ON.

Record

The record LED lights whenever the B1270 is recording voice during programming (always a two second interval).

The record LED also flashes three times when the unit first has power applied.

Play

The play LED lights whenever the B1270 is speaking a recorded voice message, which could be either an alarm recorded by the user or a stored programming prompt.

Detect

The detect LED turns on whenever the B1270 receives a valid DTMF digit over the radio, telephone or programming phone. The LED also lights when the B1270 goes off-hook and is dialing or waiting for activity on the line.

Hook

The hook LED comes on whenever the B1270 goes off hook, to dial or answer the telephone. The hook LED will flash during pulse dialing.

Ring

While powered up, the B1270 continually flashes its ring LED to show that it is operating properly. When ringing is detected on the telephone line, the LED becomes solid. The flashing LED in no way affects the detection of ringing or the operation of the telephone line. Since answering the telephone is a low priority task to the B1270, it may ignore the ringing if it is processing other tasks (e.g. speaking on the radio).

PTT

The PTT LED will light when the B1270 generates a push-to-talk signal to the radio.

PGM

This RJ11 jack is for a local programming phone.

Operation

This chapter gives a detailed description of exactly how the B1270 will operate with its default programming. Parameters which may be altered are pointed out, with reference to the appropriate Program Code section.

Alarm Sequence

When the B1270 receives an alarm on one of its inputs, it goes off hook and listens for dial tone. If dial tone is not present, the B1270 will hang up and try again. After three unsuccessful attempts to detect dial tone, the B1270 will conclude there is a problem with the line and stop dialing. When this occurs the unit will report *Telephone Access Error* over the radio.

If dial tone is detected, the B1270 dials the first telephone number stored in Directory A using tone dialing. When the telephone line is answered, the B1270 will announce its Site ID, the list of any alarms present, and prompt the user to *Enter Acknowledge Code*. It will repeat this message for 60 seconds (or a minimum of twice through all existing alarms), pausing five seconds after each announcement to wait for an acknowledgment. When the Acknowledge Code is detected, the B1270 will announce *Alarms Acknowledged* and hang up.

If the line is busy, if there is no answer, or if the B1270 does not receive the Acknowledge Code after announcing the alarm, it will hang up the telephone line after 60 seconds, then go off hook again and dial the next number in the directory. If the B1270 dials all the way through the directory without being acknowledged, it will wait two minutes (Interval Timer A), announce the alarm over the radio, then start dialing again from the top of the directory. After three tries (Times A) at two minute intervals, the B1270 will retry the list every ten minutes (Interval Timer B) thereafter, not stopping until it is acknowledged.

All of the timers and intervals mentioned above are adjustable. In addition, the B1270 may be programmed to announce the alarm a number of times over radio, or a public address system, before it starts dialing on the telephone. For these and other possible configurations, refer to Program Code 4.

Acknowledging an Alarm

When the B1270 calls you on the telephone, it may take up to five seconds before it starts speaking. After it announces the alarms, it prompts you to *Enter Acknowledge Code*. You have five seconds to begin entering the digits.

If the B1270 has been programmed to operate its relays (Program Code 3, DTMF Tones), you may send a relay code over the telephone before acknowledging the alarms. The B1270 will actuate the relay, speak the associated voice message, then prompt you again to *Enter Acknowledge Code*. After the B1270 has detected the Acknowledge Code, it will speak the phrase *Alarms Acknowledged* and hang up the phone.

There is a special code which allows you to acknowledge the alarm for sixty minutes only. After one hour, the B1270 will check the alarm inputs again, and if the same alarm is still present, it will begin the reporting cycle just as if it was a new alarm. To acknowledge for 60 minutes, enter the Acknowledge Code followed immediately by an octothorpe or pound sign (#).

Any series of digits entered immediately after the acknowledge code will be echoed back to the user. This feature is sometimes used in systems applications.

To acknowledge the B1270 locally, activate the local acknowledge switch connected to the unit (see the section on “Installation - Local Acknowledge”). The alarms may be acknowledged at any time. The *Alarms Acknowledged* announcement will occur whenever the B1270 is available to speak.

Telephoning the B1270

When you call the B1270 on the telephone, it will answer after four rings (Rings before Answer) and announce its site ID, any alarms which are present, and the status of any relays which have been assigned codes. After this announcement, the B1270 will prompt you to *Enter Control Code*. The B1270 then waits ten seconds for you to enter a code. This could be a code to operate one of the relays, an Acknowledge Code, an Interrogate Code, or an Access Code which would allow you to go into the programming mode. If an Access Code (password) has not been programmed, the B1270 will automatically go into the programming mode after five seconds, prompting you to *Enter Program Code*. You may then program the B1270 from your telephone, the same as you would from a local programming phone.

The B1270 will hang up whenever it has waited for more than ten seconds without receiving a DTMF code.

Changing Telephone Directories

Telephone directories can be changed remotely without entering the programming mode. The directory can be changed by entering the code *000* over the telephone system, local programming telephone, or two-way radio. If the directory format is set to DIRECTORY A, and *000* is received, the format will change to DIRECTORY B. If it is currently set at DIRECTORY B, then it will change back to DIRECTORY A. If the directory format is set to 3 (A SPLIT B), then this command will have no effect.

Refer to the programming section, Program Code 2, for a description of the directory format and its uses.

This example uses the local programming phone to change the telephone format from DIRECTORY B to DIRECTORY A and back again. A typical installation may use a programming telephone mounted permanently at the site to make this procedure as simple as possible.

B1270: Enter Control Code
YOU: 000
B1270: Telephone Format is Directory A
YOU: 000
B1270: Telephone Format is Directory B

It is also very common to enter this code using a DTMF keypad over the radio system when the operators at the site change shift.

Program Codes

How to Enter the Programming Mode

To begin programming, you must hear the prompt *Enter Program Code* from the B1270. One way to get to this prompt was discussed in the chapter on **Getting Started**. After you have entered the initial voice messages, telephone numbers and an Acknowledge Code, the B1270 will prompt you to begin programming. A local programming phone may be used at any time to alter parameters. It is also possible to program the B1270 remotely by dialing it up over the telephone line.

If you call up a B1270 over the phone once it has been programmed, it will answer after four rings (default) and announce its site ID, any alarms present, and the status of its relays (if they have been programmed). Then it will prompt you to *Enter Control Code*. If the unit has been programmed to operate with a password, you must enter the Access Code at this time. The B1270 will reply with *Program Access* and prompt you to *Enter Program Code*. If an Access Code has not been programmed, the B1270 will time out after five seconds and automatically enter the programming mode. You will hear the prompt *Program Access; Enter Program Code*.

When you connect a local programming phone, the B1270 goes through a similar sequence. It will announce its site ID, any alarms present, and the status of any programmed relays. Then it will prompt you to *Enter Control Code*. It is not necessary to know the Access Code to program from the local phone. Wait five seconds, and the B1270 will automatically prompt you with *Program Access; Enter Program Code*.

IMPORTANT: Remember that all programming codes must be followed by the “**” code to enter them.

The following chapter, **Programming Reference**, divides the programming parameters into functional blocks. Refer to that chapter to determine the parameter changes required for a specific function.

Appendix B is a diagram of the **Programming Tree** for the B1270. It gives a one-page overview of the parameters which may be programmed and how they are organized. The other three pages outline the parameters in more detail, including restrictions on the values which may be entered for each one. The Program Codes are explained in detail in the text which follows. Once you have become familiar with the various parameters, you will probably only need the three-page summary to guide you through the programming.

Program Code 1** : Voices

When you enter Program Code 1, you will hear the following prompt:

B1270: Enter Voice Code

YOU: 1** Record alarm messages
2** Record relay messages
** Exit to Enter Program Code prompt

1 **: Record Alarm Voices (includes site ID)

Record the voice messages associated with the unit (site ID) and each individual alarm point. These are the messages which will be announced over the radio or telephone whenever the alarm is present.

B1270: Site is ...
Alarm number 1 is ...

YOU: 2** Record
#** Quit
** Enter/Next

If the message is OK, continue by hitting Enter. If you would like to record a new message, enter 2 to record. As soon as you hit the second asterisk of the Enter code, the B1270 will prompt you with a beep-beep; you then have two seconds to speak the voice message. The B1270 will immediately speak back the message that you recorded. Repeat as many times as you need until the voice message sounds acceptable. Then hit Enter (**) to proceed, or # to exit to the *Enter Voice Code* prompt. If you enter messages for all eight alarms, the B1270 will automatically exit to the *Enter Voice Code* prompt.

Limits: 2 seconds of voice

Default: noise

2 **: Record Relay Voices

Record the voice messages associated with each relay. Note that the messages will only be announced if the relays have been programmed to operate from a DTMF string (see Program Code 3, Relay ON/OFF Input Codes). When a relay is operated, the B1270 will speak the voice message followed by the word "ON" or "OFF" to verify that the action was taken.

In some applications, it is not necessary to have voice confirmation when a relay is operated. To disable this feature, refer to Program Code 6 - Relay Voices.

The B1270 will always announce the condition of the relays when it is called up or interrogated for status.

B1270: Relay number 1 is ...

YOU: 2** Record
#** Quit
** Enter/Next

Limits: 2 seconds voice

Default: noise

Program Code 2 **: Phone Directory

When Program Code 2 is selected, it will automatically cycle through the following parameters. Keep pressing “Enter” until you reach the parameter you wish to change. When you have finished programming, hit # to exit back to the *Enter Program Code* prompt. If you hit “Enter” for an empty telephone number, the B1270 will assume you have no more numbers to enter in that directory, and advance to the next directory or back to the *Enter Program Code* prompt.

Directory Format

The B1270 may dial telephone numbers stored in the A directory, the B directory, or it may dial from directory A for alarms 1 through 4 and from directory B for alarms 5 through 8.

Note: If using only Directory A, it is good practice to program the same telephone numbers into Directory B in case the directory is inadvertently changed by someone attempting to reprogram the telephone numbers in the field.

Two directories are most often used when there are different shifts responding to alarms. For example, if one group is on call for one week, and a different group is on call the next week, rather than re-entering a new list of telephone numbers every week, the B1270 is simply reprogrammed to dial from the A or B directory. The A/B option is used when you want to alert different people depending on the nature of the alarm.

Note: If A/B is chosen and an alarm occurs in both sections 1-4 and 5-8, the B1270 will begin dialing from directory A and continue through directory B. Once the acknowledge code is received, all alarms become acknowledged and the B1270 will stop dialing.

If an expander is used with a ProTalk programmed for A/B dialing, all alarm inputs on the expander will call out from Directory A.

B1270: Telephone Format is ...

YOU: 1** (A only)
2** (B only)
3** (A/B)

Default: 1 (Directory A)

Directory Telephone Numbers

When the B1270 receives an alarm, it will begin dialing from the first number stored in the selected directory. If it does not receive an answer at that number, it will dial through all the numbers in that directory, in the order they are listed, until it is acknowledged.

B1270: Directory A telephone number 1 is ...
Directory B telephone number 1 is ...

YOU: 2** Change the telephone number
3** Delete the current number
4** Insert a new number
#** Quit
** Enter/Next

Limits: A maximum of eight telephone numbers may be stored in each directory. Each number may contain up to 13 digits.

Default: All telephone numbers are empty in the default condition.

If an octothorpe (#) is entered as a digit in a telephone number, the B1270 will insert a pause in the dialing at that point. To program this delay, refer to the section on Octo Delay (Program Code 6). This feature is most often used when communicating with devices which require special signaling, such as paging terminals. If the octothorpe is followed by second octothorpe, the delay feature will be aborted and a single octothorpe digit will be dialed.

If a telephone number is followed by an asterisk (*), the B1270 will wait four minutes before dialing the next number in the directory. This feature may be used when the called party has a rotary phone or pager. It allows time for the user to call back and acknowledge the alarm before the B1270 goes on to the next number (see Program Code 4 - Rings Before Answering).

*Note: Be sure to wait more than one second between hitting the * in the telephone number and the "Enter" code.*

When you enter a 2, the B1270 will prompt you with a beep to enter the new digits. The delete command (3) deletes the telephone number just spoken and renumbers the other numbers in the list. The insert command (4) inserts the number entered at that point in the list and renumbers all the others accordingly. These commands are used to make changes in the directories without having to re-enter all the telephone numbers.

Program Code 3:** DTMF Tones

The B1270 is capable of decoding, storing, and transmitting all DTMF tones, including codes received from a 4x4 keypad if your telephone is so equipped.

B1270: Enter DTMF Code

YOU: 1 ** Acknowledge Code
2 ** Access Code
3 ** Relay ON/OFF Input Codes
4 ** Alarm ON/OFF Output Codes
5 ** Remote Alarm Input Codes
6 ** Interrogate Code
** Exit to Enter Program Code prompt

1 **: Acknowledge Code

The Acknowledge Code is sent by the called party to acknowledge that the alarm message has been received. This stops the calling sequence of the B1270.

B1270: Acknowledge Code is ...

YOU: x ** (x = 1 to 8 DTMF digits)

Default: 1234

2 **: Access Code

The Access Code is used as a password to prevent unauthorized callers from altering the programming of the B1270. If an Access Code has been

programmed, it must be entered before a telephone caller will receive the *Enter Program Code* prompt. The Access Code is not required for local programming.

B1270: Access Code is ...

YOU: *x*** (*x = 1 to 8 DTMF digits, # = clear*)

Default: empty

3 **: Relay ON/OFF Input Codes

The relay codes allow users to perform remote control functions at the unattended site. Callers operate relays on the B1270 by sending DTMF codes from their telephone or radio keypads. Each relay has one code to turn it on and a separate code to turn it off. When a relay is operated, the B1270 speaks a voice message associated with that relay followed by the word "ON" or "OFF" (see Program Code 1 - Record Relay Voices).

B1270: Relay number 1 DTMF ON code is ...

Relay number 1 DTMF OFF code is ...

YOU: *x*** (*x = 1 to 8 DTMF digits, # = clear*)

Default: empty

4 **: Alarm ON/OFF Output Codes

These codes are used to control DTMF-operated devices at the receiving end when an alarm is reported. A typical example would be sending a message to a pager with a digital display. The DTMF ON string is sent during the alarm announcement, preceding the voice announcement for that alarm. The DTMF OFF string is sent only over radio (if enabled) when the alarm returns to normal, and is not accompanied by a voice message. This feature might be used to turn the lamps of an annunciator panel on or off depending on the condition of the alarm. In simple system applications, the alarm ON/OFF codes of one B1270 might be programmed to be the same as the relay ON/OFF codes or remote alarm input codes of another B1270.

B1270: Alarm number 1 DTMF ON code is ...

DTMF OFF code is ...

YOU: *x*** (*x = 1 to 8 DTMF digits, # = clear*)

Default: empty

5 **: Remote Alarm Input Codes

If a remote alarm input code has been programmed, when it is received by the B1270 it will be interpreted exactly the same as a closure to ground on that input. The most common application is to obtain an alarm report from a remote site via radio.

Do not hard wire an alarm to an input that has been programmed with a remote alarm input code.

B1270: Alarm number 1 remote alarm code is ...
YOU: *x ** (x = 1 to 8 DTMF digits, # = clear)*

Default: empty

6 **: Interrogate Code

The Interrogate Code is used to call up the B1270 and find out its status. When it receives the code, the unit reports its site ID, any alarms which are present, and the status of any relays which have been programmed to operate. Only the voice messages are repeated; no signaling is sent. As the B1270 always announces its status when it is telephoned, this code is used primarily for querying over radio.

B1270: Interrogate Code is ...
YOU: *x ** (x = 1 to 8 DTMF digits)*

Default: 5678

Program Code 4 **: Configuration

When you enter Program Code 4, the B1270 will automatically cycle through the following parameters. After the last one, "Times A", it will go back to the *Enter Program Code* prompt.

Number of Radio Cycles

This parameter defines the number of times the B1270 will report the alarm over the radio, and wait a preset time for an acknowledgment, before it starts to dial out over the telephone. To define the wait duration, refer to the section on Radio Delay (Program Code 5)

B1270: Radio cycles is ...
YOU: *0 ** no radio (telephone only)*
*x ** radio cycles (x = 1 to 8)*

Default: 0 (no radio cycles)

Rings Before Answering

When the B1270 is dialed, this parameter sets the number of times it will let the telephone ring before it answers.

B1270: Answer rings is ...

YOU: 0 ** no answer
x ** number of rings (x = 1 to 8)
** answer and automatically acknowledge after 8 rings

If the B1270 is on its own telephone line, it will normally be programmed to answer right away, after one or two rings. However, if the line is shared with other users, it should be programmed to answer after 6 to 8 rings, giving people lots of time to pick up the phone before the B1270 automatically answers.

The # is used when the called parties have dial pulse phones. They cannot acknowledge receipt of an alarm using a DTMF code. Instead the B1270 recognizes 8 rings on the telephone line as an Acknowledge Code. In the telephone directory, these numbers would be programmed with an asterisk *) following them, allowing 4 minutes to elapse before the next number is dialed. This gives the called party time to hang up the phone, call the B1270 back and let the phone ring 8 times to acknowledge receipt of the alarm (refer to Program Code 2 - Phone Directory).

Default: 4 (answer after 4 rings)

Interval Timer A

If an alarm is not acknowledged right away, this timer initially determines how often the B1270 will repeat its alarm reporting sequence.

B1270: Timer A is 2 minutes
YOU: x ** minutes (x = 1 to 249)

Default: 2 minutes

Interval Timer B

After the initial period, this timer determines how often the B1270 goes through its alarm reporting sequence.

B1270: Timer B is 10 minutes

YOU: 0 ** automatically acknowledge after Interval A
x ** minutes (x = 1 to 249)

0 would be selected if the alarms were announced over a public address system, for example, where there is no way for the alarms to be acknowledged.

Default: 10 minutes

Cycles Through Timer A (Times A)

This number determines how many times the B1270 will cycle through its alarm reporting sequence at A intervals before switching to B intervals. With its default settings, the B1270 will try 3 times at 2 minute intervals, then switch to reporting at 10 minute intervals. The switch to the B interval is primarily to conserve air time on busy radio systems.

B1270: Times A is ...

YOU: x ** times (x = 1 to 8)

Default: 3

Program Code 5***: Signaling

When you enter Program Code 5, the B1270 will automatically cycle through the following parameters as you hit Enter (**). After announcing all the radio windows, the B1270 will go back to the *Enter Program Code* prompt. If you wish to go back to the prompt without going through all the radio windows, enter #.

Repeats

This parameter defines the number of times the complete alarm message, including any signaling, is repeated each time it is sent. For example, in a noisy radio environment, you might wish to repeat the message several times each transmission to ensure that it is understood.

B1270: Repeats is ...

YOU: x ** repeat (x = 1 to 8)

Default: 1

Radio Delay

When radio cycles are programmed, the B1270 will wait after a radio transmission for the receipt of the Acknowledge Code. The duration of the wait is programmed by this parameter.

B1270: Radio Delay is ___ seconds
YOU: x** repeat (x = 01 to 249 seconds)

Default: 20 seconds

Radio Windows

The radio windows are six unique slots for entering different types of signaling to be sent over the radio. These windows do not apply to messages sent over the telephone.

*Note that when you scroll through the radio windows using Enter/Next (**), the B1270 will not announce the frequencies associated with a particular signaling window unless you actually enter a new format for that window. If you just want to check the frequencies, re-enter the same code into a window when the prompt is spoken. After the last window is announced, the B1270 will return to the Enter Program Code prompt. If you don't want to go all the way through, enter # to exit.*

B1270: Radio window number 1 is ...
YOU: 0** Empty
1** Voice
2** 2-Tone
3** Single Tone
4** Alert Tone
5** 5-Tone
6** DTMF
7** Delay

0 (empty): If a radio window is empty, there is no signaling associated with it and the window does not consume any time in the transmission.

1 (voice): A voice message consists of the site ID, any alarm messages, plus any signaling specifically associated with that point. For example, if the alarm point has been programmed with a DTMF output code, this code is considered part of the voice message and does not require a separate signaling window.

2 (2-tone): When you enter the code for 2-tone paging, the B1270 will prompt you to enter the two tones, A and B.

B1270: Tone A is _ _ _ _ point _ cycles

YOU: $x **$ ($x = 1000$ to 19999 representing 100.0 to 1999.9 Hertz)

To send group call, set tone A equal to tone B.

3 (single tone): When you enter the code for single tone, the B1270 will prompt you to enter the tone.

B1270: Single tone is _ _ _ _ cycles

YOU: $x **$ ($x = 100$ to 1999 Hertz)

4 (alert tone): This code will insert an alert tone (beep-beep-beep) in the radio window.

5 (5 tone): When you enter the code for 5-tone paging, the B1270 will prompt you to enter a five tone CAP code. The first digit specifies the preamble, while the next 5 specify the 5 tone code.

B1270: 5 tone code is _ point _ _ _ _ _

YOU: $x **$ ($x = 0$ to 9 for each digit, 6 digits total)

Then the B1270 will prompt you to specify which manufacturer's 5-tone format you are using.

B1270: Format is ...

YOU: $0 **$ Motorola

$x **$ ($x = 1$ to 4) undefined

6 (DTMF): When you enter the code for a DTMF string, the B1270 will prompt you to enter the string.

B1270: code is ...

YOU: $x **$ ($x = 1$ to 8 DTMF digits)

7 (delay): When the code for a delay is entered, the B1270 will prompt you to enter the length of the delay.

B1270: Delay is _ point _ seconds

YOU: *x** (x = 01 to 99 representing 0.1 to 9.9 seconds)*

Defaults: Radio window #1 4 (alert tone)
 Radio window #2 1 (voice message)
 Radio window #3 0 (empty)
 Radio window #4 0 (empty)
 Radio window #5 0 (empty)
 Radio window #6 0 (empty)

Program Code 6 **: Advanced Configurations

When you enter Program Code 6, the B1270 will automatically cycle through the following parameters as you hit Enter (**). When it has completed the whole list, it will return to the *Enter Program Code* prompt.

Alarm Format

This parameter changes the format of the B1270 alarm inputs to match the output of your monitoring devices in the field. Normally open inputs indicate an alarm when the input is grounded, and when the ground signal is removed, the alarm is interpreted as having cleared. Normally closed inputs are grounded in their normal state, and open when an alarm occurs. Latched inputs recognize a pulse as an alarm. After the pulse has disappeared, the input is deemed to be in the alarm condition until it is acknowledged.

Note: Your latched alarm should provide a short, predictable pulse to the input of the ProTalk; otherwise, it may have to be acknowledged twice. If the alarm is acknowledged while the input is active, the alarm will not be cleared and new alarms will not activate that input.

B1270: Alarm format is ...

YOU: *0** normally open*
 *1** normally closed*
 *2** normally open latched*
 *3** normally closed latched*

Default: 0 (normally open)

Dial Format

This parameter determines the method of dialing telephone numbers. Tone format dials using DTMF (or touch-tone) tones. Pulse format dials using pulses as a rotary phone would.

B1270: Dial Format is ...
YOU: 0** tone dialing
1** pulse dialing

Default: 0 (tone dialing)

Squelch Polarity

This code changes the polarity of the signal used to indicate a busy radio channel.

B1270: Squelch is ...
YOU: 0** high = clear channel
1** low = clear channel

Default: 0 (transmit on high)

Relay Voices

This code enables or disables the B1270's spoken response to a relay operation. If the B1270 is used in a control situation where monitoring the relay operation is not required, the B1270 would be programmed with the relay voices muted. The B1270 relay voices should be enabled where verification of a relay operation is required.

B1270: Relay voice is ...
YOU: 0** OFF
1** ON

Default: 1 (voices on)

Acknowledge Request

This code enables or disables the B1270's voice prompt *Enter Acknowledge Code*. If the alarm announcement is over a public address system, for example, acknowledgment is not possible. The B1270 would be programmed for automatic acknowledgment (see Interval Timer B, Program Code 4) and the request for an Acknowledge Code would be disabled.

The B1270 will continue transmitting its alarms until it receives some form of acknowledgment, automatic or otherwise, even if it does not request one.

B1270: Acknowledge voice is ...

YOU: 0** OFF
1** ON

Default: 1 (enabled)

Relay ON Time

The B1270 is normally supplied with four relays that are turned ON with the relay ON codes and turned OFF with the relay OFF codes. The relay timer may be used to turn ON a relay for a specified duration and then turn it OFF automatically. The timer controls the period of time the relay is ON. The interval is programmable from 1 to 199 minutes. The timers for each relay are programmed separately and operate independently.

B1270: Relay Number 1 On timer is _ _ _ minutes

YOU: 0** on continuously
x** minutes ($x = 1$ to 199)

Default: 0 (ON until turned OFF)

Octo Delay

When an # is added to a telephone number, the B1270 will pause before it continues dialing. The duration of the pause is programmed by this parameter. The delay is often used for interfacing with dial-up paging systems that display data.

B1270: Telephone Octo Delay is _ _ seconds

YOU: x** ($x = 1$ to 29)

Default: 10 seconds

Alarm Delay (Debounce)

This parameter controls the amount of time an alarm must be present before it actually registers as an alarm. This feature is often used to eliminate fleeting alarms, where the device in the field does not present a clean closure to indicate an alarm, but a series of bounces on the contacts. Another example might be to overcome momentary power fluctuations which

cause false alarms to be reported. The debounce on each alarm may be individually set.

B1270: Alarm number 1 delay is _ _ point _ seconds
YOU: *x ** seconds (x = 0.1 to 19.9)*

The value must be entered in tenths of a second, from 1 to 3 digits. The last digit entered is interpreted as the least significant, i.e. tenths of a second.

Default: 0.5 seconds

Program Code 7 **: Expanders

When Program Code 7 is entered, the B1270 gives you the following parameters.

Number of Expanders

Increase the capacity of a basic B1270 by adding up to 7 expanders, each with an additional 8 alarm inputs and 4 relay outputs.

B1270: Expander number is . . .
YOU: *x ** expanders (x = 0 to 7)*

Default: 0

Site Voice Enable

This code enables or disables the announcement of a site ID from the expander unit. If the expander is being used to increase the number of alarms to be reported from a single site, you probably don't need to announce the site ID again. However, the site ID might be useful to differentiate between alarms from different areas or pieces of equipment.

B1270: Expander site voice is . . .
YOU: *0 ** OFF*
*1 ** ON*

Default: 0 (expander site ID disabled)

To program the parameters within the expander, the PGM port on the B1270 is used. Programming is done exactly as though the main unit itself was being programmed, except that the expander number precedes the program code. Refer to Example 10 - Adding an Expander for a specific description of this procedure.

Program Code #:** **Reset Database**

This code is used to reset all of the programmed parameters (excluding voices) to their default values.

B1270: Enter empty code

*YOU: #31 ** clear database*

Any other entry will leave the database unchanged.

Programming Reference

The ProTalk B1270 is capable of performing many functions other than those set by its default values. If you require these extended capabilities, they are accessed through the program codes. If the default operation of the unit as described in the **Getting Started** chapter of this manual is sufficient, then you may ignore this section.

This chapter organizes the programming parameters by their functions. See the chapter on **Program Codes** for more detail on the use and meaning of the referenced parameters.

1. Alarm Announcement

This section identifies all of the parameters that determine WHAT is sent when an alarm occurs. By programming these parameters, you may send voice, signaling, and paging tones. Note that two of the parameters apply only to transmissions over the radio.

Record Alarm Voices (Program Code 1,1)
Alarm ON/OFF Output Codes (Program Code 3,4)
Acknowledge Request (Program Code 6)
Radio Windows (Radio Only) (Program Code 5)
Repeats (Radio Only) (Program Code 5)

2. Alarm Operation

This section identifies all of the parameters that determine WHEN an alarm will be announced. By programming these parameters, you control when an alarm is recognized and announced by the ProTalk B1270 unit.

Alarm Format (Program Code 6)
Alarm Delay (Program Code 6)
Interval Timer A (Program Code 4)
Interval Timer B (Program Code 4)
Cycles Through Timer A (Program Code 4)

3. Operation Codes

These parameters control how the unit operates. When one of these codes is received, the B1270 performs the required function. The Remote Alarm Input Code is supplied as an option only and is typically not required.

Acknowledge Code (Program Code 3,1)
Access Code (Program Code 3,2)
Interrogate Code (Program Code 3,6)
Remote Alarm Input Code (Program Code 3,5)

4. Relay Control

The parameters required to control a relay are listed here. You may use any number of relays, but the ON/OFF input codes, voice message and relay ON time must be programmed for each relay used. The relay voice code enables or disables the voice confirmation for all relays.

Relay ON/OFF Input Codes (Program Code 3,3)
Record Relay Voices (Program Code 1,2)
Relay On Time (Program Code 6)
Relay Voice (Program Code 6)

5. Telephone Specific Parameters

This section describes the parameters used when the unit is required to transmit alarms or signaling over the telephone system.

Directory Format (Program Code 2)
Directory Telephone Numbers (Program Code 2)
Access Code (Program Code 3,2)
Rings Before Answering (Program Code 4)
Dial Format (Program Code 6)

6. Radio Specific Parameters

These parameters control the operation of the unit when it is connected to a two-way radio. Refer to the installation section in **Getting Started** for the required connections to the radio.

Number of Radio Cycles (Program Code 4)
Repeats (Program Code 5)
Radio Windows (Program Code 5)
Squelch Polarity (Program Code 6)
Radio Delay (Program Code 5)

7. Expander Attachment

When an expander is added to the system, these parameters must be set. They configure the main B1270 unit to accept the expander. The parameters within the expander must also be programmed. Refer to the **Advanced Programming Examples** for an example of how this is done.

Number of Expanders (Program Code 7)

Site Voice Enable (Program Code 7)

Advanced Programming Examples

Example 1: Reporting Alarms over Radio and Telephone

In this example, assume that your company has a mobile radio system which is monitored by field personnel. Radio operators have DTMF pads on their mics so they can acknowledge an alarm from the B1270. They would like to have the alarm reported over the radio system three times, then dialed out over the telephone if it is not acknowledged. If the alarm is not acknowledged, the B1270 should try again in ten minutes. After six tries at ten minute intervals, the B1270 should switch to trying once an hour. The COS on the radio used with the B1270 gives a low signal when the channel is busy.

B1270: Enter Program Code
YOU: 4 ** ; Configuration
B1270: Radio cycles is 0
YOU: 3 **
B1270: Radio cycles is 3
YOU: **
B1270: Answer rings is 4
YOU: **
B1270: Timer A is 2 minutes
YOU: 10 **
B1270: Timer A is 10 minutes
YOU: **
B1270: Timer B is 10 minutes
YOU: 60 **
B1270: Timer B is 60 minutes
YOU: **
B1270: Times A is 3
YOU: 6 **
B1270: Times A is 6
YOU: **
B1270: Enter Program Code
YOU: 5 ** ; Signaling
B1270: Repeats is 1
YOU: **
B1270: Radio window number 1 is Alert
YOU: **
B1270: Radio window number 2 is Voice
YOU: **
B1270: Radio window number 3 is Empty
YOU: 1 **
B1270: Radio window number 3 is Voice

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YOU: **
B1270: Radio window number 4 is Empty
YOU: # **
B1270: Enter Program Code
YOU: 6 ** ; *Advanced Configs*
B1270: Alarm Format is 1
YOU: **
B1270: Squelch is 0
YOU: 1 **
B1270: Squelch is 1
YOU: **
B1270: Relay Voice is ON

At this point you are finished programming and may hang up the telephone. Note that the radio windows were programmed with the voice message repeated twice and repeats set to one. With this programming, the message heard over the radio will be an alert tone followed by two repetitions of the voice message. Over the telephone, the message will be repeated only once. If repeats had been set to two and the voice entered in only one radio window, the alert tone and message would each have been repeated twice over the radio.

When the B1270 registers an alarm, the reporting cycle will be as follows:

Over radio: Alert tone
 Ajax Compressor Station; Power Failure
 Ajax Compressor Station; Power Failure
 Enter Acknowledge Code

 pause for 4 minutes

 Alert tone
 Ajax Compressor Station; Power Failure
 Ajax Compressor Station; Power Failure
 Enter Acknowledge Code

 pause for 4 minutes

 Alert tone
 Ajax Compressor Station; Power Failure
 Ajax Compressor Station; Power Failure
 Enter Acknowledge Code
 pause for 4 minutes

Over telephone: dial through directory

If no acknowledgment is received over the telephone, the B1270 will wait ten minutes and try the complete sequence again, starting with the radio cycle. If no Acknowledge Code is received after six tries at ten minute intervals, the B1270 will switch to reporting every hour until the alarm is acknowledged.

Example 2: Dialing from Two Different Telephone Directories

In this example, the B1270 is programmed to telephone whoever is on call if there is an alarm. The company has two groups of employees which take turns being on call alternate weeks. Instead of reprogramming the B1270 telephone directory every week, two telephone directories are programmed. When the shift changes, the B1270 is reprogrammed to dial from the other directory. The directory may be switched by changing the Telephone Format in the programming mode, or by entering the DTMF code *000* over the telephone, local programming phone, or two-way radio.

B1270: Enter Program Code
YOU: 2 *** ; *Phone Directory*
B1270: Telephone Format is Directory A
YOU: **
B1270: Directory A telephone number 1 is 2559544
YOU: 3963285 **
B1270: Directory A telephone number 1 is 3963285
YOU: **
B1270: Directory A telephone number 2 is empty
YOU: 2798652 **
B1270: Directory A telephone number 2 is 2798652
YOU: **
B1270: Directory A telephone number 3 is empty
YOU: **
B1270: Directory B telephone number 1 is 2592343
YOU: 6547586 **
B1270: Directory B telephone number 1 is 6547586
YOU: **
B1270: Directory B telephone number 2 is empty
YOU: 6765456 **
B1270: Directory B telephone number 2 is 6765456
YOU: **
B1270: Directory B telephone number 3 is empty
YOU: # **

B1270: Enter Program Code

Right now the B1270 is programmed to dial from the A directory. When you wish to dial from the B directory, call up the B1270 and follow these steps:

B1270: Enter Program Code

YOU: 2** ; *Phone Directory*

B1270: Telephone Format is Directory A

YOU: 2**

B1270: Telephone Format is Directory B

YOU: **

Alternatively, you may enter the DTMF code *000* without going into the programming section.

Example 3: Different Alarms Dialing Different Telephone Numbers

A B1270 is used in an application where there are two different types of related alarms. Some are building alarms, such as intrusion alarms, building temperature, power failure, etc. Others are alarms relating to specific equipment failures, such as compressor failure, high tank level or sump overflow. It is desired to have the maintenance personnel alerted if there is a building alarm, but if there is a problem with the equipment, they would like to alert the operations technicians.

In this example, alarms 1 and 2 are connected to intrusion alarm and building high temperature respectively. These are building alarms, and are to dial the building maintenance people at 234-8888. Compressor failure and high tank level are fed to alarms 5 and 6. Since these are equipment problems, operations technicians at 234-9999 are to be alerted.

B1270: Enter Program Code

YOU: 2** ; *Phone Directory*

B1270: Telephone Format is Directory A

YOU: 3**

B1270: Telephone Format is Directory A split B

YOU: **

B1270: Directory A Telephone Number 1 is empty

YOU: 2**

B1270: Beep

YOU: 2348888 **

B1270: Directory A Telephone Number 1 is 2348888

YOU: **

B1270: Directory A Telephone Number 2 is empty

YOU: **

B1270: Directory B Telephone Number 1 is empty
YOU: 2 **
B1270: Beep
YOU: 2349999 **
B1270: Directory B Telephone Number 1 is 2349999
YOU: **

The B1270 is now programmed to dial directory A (234-8888) when alarms 1 or 2 occur, and directory B (234-9999) when alarms 5 or 6 occur.

Example 4: Actuating Relays

In this example, when you receive the alarm “High Pressure” from the B1270, you would like to be able to operate a bypass valve for up to ten minutes. The valve can be controlled by one of the relays on the B1270 board using a DTMF code.

B1270: Enter Program Code
YOU: 1 ** ; *Voices*
B1270: Enter Voice Code
YOU: 2 ** ; *Record Relay Voices*
B1270: Relay number 1 is !@#\$\$%^ & *
YOU: 2 **
B1270: beep-beep
YOU: *Bypass Valve*
B1270: Relay number 1 is Bypass Valve
YOU: **
B1270: Relay number 2 is !@#\$\$%^ & *
YOU: # **
B1270: Enter Voice Code
YOU: **
B1270: Enter Program Code
YOU: 3 ** ; *DTMF Tones*
B1270: Enter DTMF Code
YOU: 3 ** ; *Relay ON/OFF Codes*
B1270: Relay number 1 DTMF ON code is empty
YOU: 555* (*pause*) **
B1270: Relay number 1 DTMF ON code is 555*
YOU: **
B1270: Relay number 1 DTMF OFF code is empty
YOU: 555# **
B1270: Relay number 1 DTMF OFF code is 555#
YOU: **
B1270: Relay number 2 DTMF ON code is empty
YOU: **

B1270: Relay number 2 DTMF OFF code is empty
YOU: **
B1270: Relay number 3 DTMF ON code is empty
YOU: **
B1270: Relay number 3 DTMF OFF code is empty
YOU: **
B1270: Relay number 4 DTMF ON code is empty
YOU: **
B1270: Relay number 4 DTMF OFF code is empty
YOU: **
B1270: Enter DTMF Code
YOU: **
B1270: Enter Program Code
YOU: 6 ** ; *Advanced Configs*
B1270: Alarm format is 1
YOU: **
B1270: Squelch is 0
YOU: **
B1270: Relay voice is ON
YOU: **
B1270: Acknowledge voice is ON
YOU: **
B1270: Relay Number 1 on timer is 0 minutes
YOU: 1 0 **
B1270: Relay Number 1 on timer is 1 0 minutes
YOU: **
B1270: Relay Number 2 on timer is 0 minutes

At this time you are finished programming and can hang up the phone.
When the B1270 calls you with an alarm, the sequence will be as follows:

B1270: Ajax Compressor Station; High Pressure.
Enter Acknowledge Code

YOU: 555*

B1270: Ajax Compressor Station;
Bypass Valve ON.

YOU: 1234

B1270: Ajax Compressor Station;
Alarms Acknowledged

Example 5: Operating a Radio Pager

In this example, when an alarm is received you want to contact the person on call, who is carrying a two-tone radio pager which operates on the company's private radio system. If the person does not call back to acknowledge the alarm, you want the B1270 to start dialing telephone numbers.

```
B1270: Enter Program Code
YOU: 4 ** ; Configuration
B1270: Radio cycles is 0
YOU: 4 **
B1270: Radio cycles is 4
YOU: **
B1270: Answer rings is 4
YOU: **
B1270: Timer A is 2 minutes
YOU: **
B1270: Timer B is 10 minutes
YOU: **
B1270: Times A is 3
YOU: **
B1270: Enter Program Code
YOU: 5 ** ; Signaling
B1270: Repeats is 1
YOU: 2 **
B1270: Repeats is 2
YOU: **
B1270: Radio window number 1 is Alert
YOU: 2 **
B1270: Tone A is empty
YOU: 6483 **
B1270: Tone A is 6 4 8 point 3 cycles
YOU: **
B1270: Tone B is empty
YOU: 10320 **
B1270: Tone B is 1 0 3 2 point 0 cycles
YOU: **
B1270: Radio window number 1 is two-tone
YOU: **
B1270: Radio window number 2 is Voice
YOU: 7 **
B1270: Delay is empty
YOU: 20 **
B1270: Delay is 2 point 0 seconds
YOU: **
B1270: Radio window number 2 is delay
```

YOU: **
B1270: Radio window number 3 is Empty
YOU: 1 **
B1270: Radio window number 3 is Voice
YOU: **
B1270: Radio window number 4 is empty
YOU: # ** ; *Exit*
B1270: Enter Program Code

You are finished programming and may hang up the phone. Note that in this example repeats were set to 2. Every time the B1270 transmits, the entire radio window, including the tones, will be repeated twice.

Example 6: Dialing a Paging Terminal

In this example, rather than using a private radio system, the company's employees utilize a city-wide paging service. Normally when you dial the paging terminal, you are prompted to enter your own telephone number. Your number is then displayed on the digital read-out of the pager, so the paged party knows what number to call back. We are going to program the B1270 to call this paging terminal when it reports an alarm. The alarm is at 7-34 Compressor Station.

B1270: Enter Program Code
YOU: 2 ** ; *Phone Directory*
B1270: Telephone format is directory A
YOU: **
B1270: Directory A telephone number 1 is 2559544
YOU: 2 **
B1270: beep-beep
YOU: 2857543#734 **
B1270: Directory A telephone number 1 is 2857543#734
YOU: **
B1270: Directory A telephone number 2 is 2592343
YOU: # **
B1270: Enter Program Code
YOU: 3 **
B1270: Enter DTMF Code
YOU: 4 **
B1270: Alarm number 1 DTMF ON code is empty
YOU: *1* (pause) **
B1270: Alarm number 1 DTMF ON code is *1*
YOU: **
B1270: DTMF OFF code is empty

You are finished programming and may hang up the phone.

When an alarm occurs, the B1270 will dial the number of the paging terminal, 285-7543; then the # entered as part of the telephone number will cause a ten second pause (default) in the dialing. This wait is inserted to overcome any answer time and prompts at the paging terminal. To change the length of this pause, program the Octo Delay in the Advanced Configurations (Program Code 6). Then the B1270 will dial the rest of the digits, 734, and announce the alarm. Since a DTMF alarm ON code has been programmed, the DTMF string *1* will be sent preceding the voice message. The message displayed on the pager will be:

734*1*

which will be interpreted as alarm number 1 at the 7-34 site.

In this example, the same result could have been achieved by sending 734 as part of the alarm ON DTMF code. However, since the telephone directory can accommodate numbers up to 14 digits, the 734 is included as part of the telephone number and is sent with every alarm. It appears much like a site identifier.

This example also assumes that the pager could be dialed directly. Sometimes a separate number for the pager must be dialed after the number for the paging terminal. In that case, you might need to insert another delay, and there might not be room to include the site identifier as part of the telephone number.

Another way the B1270 could be programmed to dial a paging terminal would be to make the alarm ON DTMF code the same as the telephone number of the B1270. The telephone number would then be displayed on the pager, and the called party would receive the alarm message when he called the B1270 back. The B1270 would have to be programmed to wait some time for an acknowledgment before it continued dialing. Use the * after the telephone number for this function.

Example 7: Announcing Alarms over a Public Address System

In this example, the B1270 is used to announce alarms from an unattended location over a building's public address system. You want the alarms to be announced three times, then have the B1270 automatically acknowledge itself and stop transmitting.

Connect the radio signals from the B1270 to the PA inputs.

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B1270: Enter Program Code
YOU: 4 ** ; Configuration
B1270: Radio cycles is 0
YOU: **
B1270: Answer rings is 4
YOU: **
B1270: Timer A is 2 minutes
YOU: 1 **
B1270: Timer A is 1 minutes
YOU: **
B1270: Timer B is 10 minutes
YOU: 0 **
B1270: Timer B is 0 minutes
YOU: **
B1270: Times A is 3
YOU: **
B1270: Enter Program Code
YOU: 5 **
B1270: Repeats is 1
YOU: **
B1270: Radio window number 1 is Alert
YOU: 1 **
B1270: Radio window number 1 is Voice
YOU: **
B1270: Radio window number 2 is Voice
YOU: 0 **
B1270: Radio window number 2 is Empty
YOU: **
B1270: Radio window number 3 is Empty
YOU: # ** ; Quit
B1270: Enter Program Code
YOU: 6 ** ; Advanced Configs
B1270: Alarm Format is 1
YOU: **
B1270: Squelch is 0
YOU: **
B1270: Relay voice is ON
YOU: **
B1270: Acknowledge Voice is ON
YOU: 0 **
B1270: Acknowledge Voice is OFF
YOU: **
B1270: Relay Number 1 On timer is 0 minutes

At this point you are finished programming and may hang up.

Example 8: Activating an Annunciator Panel

In a simple system application, a B1270 is going to be used to report alarms from a number of remote locations by turning the lamps of an annunciator panel on and off.

Figure 3 shows a system where two remote sites are passing DTMF codes to a central site. The Alarm ON DTMF code associated with the remote alarms is the same as the Relay ON DTMF code at the central site. Similarly, the Alarm OFF codes at the remotes are the same as the Relay OFF codes at the central site.

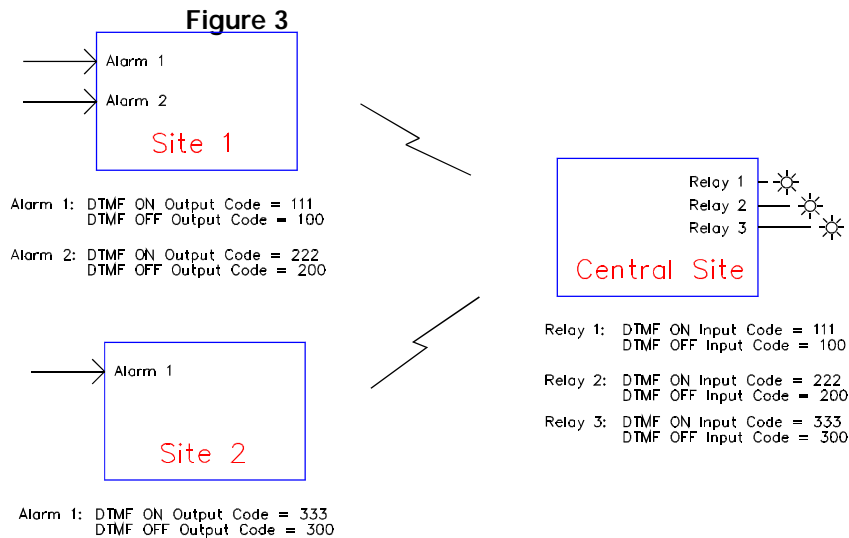


Figure 3 – Remote sites 1 and 2 concentrating their alarms into the central site's relays to control annunciator lamps.

Activating an Annunciator Panel

When a remote alarm occurs, the DTMF code for that alarm is transmitted to the central site. On receiving this code, the central site activates the relay associated with that alarm. When the alarm clears, the OFF code is transmitted from the remote, and the central site's associated relay is released.

Example 9: Concentrating Alarms from Remote Sites

In the following example, a number of remote sites report their alarms over radio to a B1270, which concentrates the alarms and reports them over the telephone.

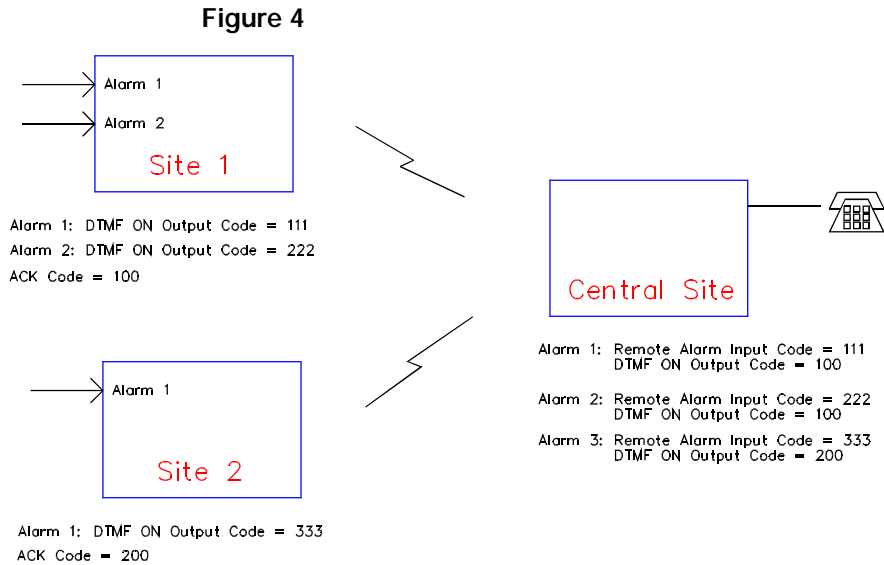


Figure 4 – Remote Sites 1 and 2 concentrating their alarms into the central site. Upon receiving the alarm, the remote is acknowledged and the alarm is then reported over the telephone.

Concentrating Remote Alarms

Figure 4 is an example of two remote sites communicating with a central site to have their alarms announced over the telephone. At the remote site, the B1270s are programmed to operate over radio. They are programmed with an alarm ON output code and an Acknowledge Code. At the central site, the B1270 is programmed to accept remote alarm inputs on alarms 1, 2, and 3, and is connected to a telephone.

When one of the remote units is alarmed, it will send its alarm ON output code over the radio. This code will be interpreted as a remote alarm input code at the central unit. This will initiate the B1270 to send its alarm report over radio and telephone. As part of its alarm sequence over radio, the B1270 will send its alarm ON output code. This code will be interpreted as an acknowledgment by remote, and it will stop sending the alarm. The central unit will continue to report over radio and telephone until it is acknowledged.

Example 10: Adding an Expander

In this example, you are adding an expander to a B1270 to increase the number of alarm inputs and relay outputs.

Install and program the main B1270 unit as per the instructions in this manual. Install the expander in a location very close to the B1270. Complete the wiring to all the alarms and relays, then apply power to the expander. Connect the cable supplied with the expander from the auxiliary connector on the B1270 to the SERIAL IN connector on the expander.

The expander is programmed from the B1270. Note that when the Program Code is entered, it is preceded by the number of the expander.

```

B1270: Enter Program Code
YOU: 7** ; Expanders
B1270: Expander number is 0
YOU: 1**
B1270: Expander number is 1
YOU: **
B1270: Expander site voice is 0
YOU: **
B1270: Enter Program Code
YOU: 11** ; Expander 1, Voices
B1270: Enter Voice Code
YOU: 1** ; Record Alarm Voices
B1270: Expander number 1 alarm number 1 is !@#$$%^ &*
YOU: 2**
B1270: beep-beep
YOU: Intrusion
B1270: Expander number 1 alarm number 1 is Intrusion
YOU: **
B1270: Expander number 1 alarm number 2 is !@#$$%^ &*
YOU: 2**
B1270: beep-beep
YOU: High Temp
B1270: Expander number 1 alarm number 2 is High Temp
YOU: **
B1270: Expander number 1 alarm number 3 is !@#$$%^ &*

```

Continue programming in the normal fashion, remembering to enter the number of the expander before the Program Code. Only the voices **MUST** be programmed; the other parameters have their standard defaults. Not all parameters are accessible in the expander. The following is a list of those which may be programmed:

Voices
Relay ON/OFF codes
Alarm ON/OFF codes
Remote alarm input codes
Alarm format
Relay ON time
Alarm delay (debounce)

If you try to change any other parameters, the B1270 will announce *Error*. If you try to change a parameter for an expander that is not defined, the B1270 will announce *Expander Number Error*. To solve this problem, define all of the expanders in the system in the B1270 using program code 7 (number of expanders).

To change the alarm ON code for the first alarm on the second expander, you would program the following (the example assumes that the number of expanders has already been set to 2 as shown above):

B1270: Enter Program Code
YOU: 23 ** ; *Expander 2, DTMF Tones*
B1270: Enter DTMF Code
YOU: 4 ** ; *Alarm ON/OFF Output codes*
B1270: Expander number 2 alarm number 1 DTMF ON code is Empty
YOU: 9876 **
B1270: Expander number 2 alarm number 1 DTMF ON code is 9876
YOU: **

etc.

Troubleshooting

Problem: I've hooked up the B1270 as per the installation instructions but nothing happens.

- Check with a voltmeter that +12 VDC is present at the +12 terminal connection. Check that the polarity is correct — GND should be negative.

Problem: The B1270 will not program from a local programming phone.

- If you are not hearing the voice prompt to begin programming, check that the programming phone is plugged into the PGM jack and not the LINE jack which is located on the rear.

- If you are hearing the voice prompt to begin programming, but the B1270 does not register your entries, check that you are using a tone phone. Sometimes a pushbutton phone actually sends dial pulses rather than DTMF. You can tell the difference by listening in the earpiece; pulse dialing sounds like clicking, DTMF like tones.

- Check that the DETECT LED on the front panel is lighting when you send a digit. Some phones send short bursts of tone rather than continuous tone while the key is depressed. If the B1270 is not detecting DTMF, try another phone.

- Disconnect the RX input from the radio. Audio received from this input is summed with the audio from the programming phone. If noise is being received, it will affect the decoding of tones and the programming of the voices. The RX input should always be connected to squelched audio.

Problem: The B1270 does not dial out over the telephone line when an alarm occurs.

- Check that the phone line is plugged into the correct jack. The jack labeled PGM is for a local programming phone; the telephone line should be plugged into the LINE jack on the rear.

- Check that the telephone is dialing from the correct directory (Program Code 2). The B1270 has two separate directories, A and B. Check that the telephone numbers are entered correctly in the selected directory, and that the directory is not empty.

- Check that an alarm is actually present, as indicated by the LEDs on the front panel. In its default condition, the B1270 expects to see a closure to ground at the alarm input. If your alarm inputs are normally closed con-

tacts which open on an alarm condition, this parameter may be adjusted using Program Code 6. Also check the alarm delay parameter in the Advanced Configurations (Program Code 6). This parameter may be set to delay reporting an alarm until it has been present for a certain number of seconds, in which case it will not recognize a momentary closure.

- If there is no radio connected on the system, ensure that the number of radio cycles is set to 0 (Program Code 4 - Configuration). If this value is not 0, the unit will attempt to announce the alarms over the radio and wait for an acknowledge code before trying the telephone, resulting in an undesirable delay.

Problem: The B1270 waits a long time before announcing the alarm over the radio.

- Check that the radio's Carrier Operated Switch (COS) is providing a high-going signal to indicate the channel is busy. If the polarity is reversed, the B1270 will interpret the clear channel as busy, and will wait one minute before it times out and transmits. This parameter may be adjusted using Program Code 6. Check also that the COS pot on the front of the B1270 has been correctly adjusted for the signal level being provided from the radio.

- Check the alarm delay parameter in the Advanced Configurations (Program Code 6). If a delay has been programmed, the B1270 will wait until the alarm has been present for that interval before reporting it.

- Check the programming of your radio windows with Program Code 5. To allow for different types of signaling over radio, the message window for the alarm contains six time slots into which different combinations of voice, tones or delays may be programmed.

Problem: The B1270 continues dialing even after the alarms have been acknowledged.

- The most common cause of this problem is fleeting alarms. They occur when the device reporting an alarm to the B1270 gives a series of pulses on the contacts instead of a clean closure. If the problem cannot be corrected in the field wiring, one option is to "debounce" the alarms using the B1270 alarm delay parameter in the Advanced Configurations (Program Code 6). When this value is set, contacts must be closed for a certain period of time before they are recognized as alarms.

- Check if any new alarms are announced if the B1270 continues to dial after it has been acknowledged. Sometimes alarms at a remote site are related, occurring in a chain reaction from a single cause. The B1270 will start dialing when it receives the first alarm, but if another alarm occurs in the meantime, it will keep dialing until all the alarms are acknowledged.

Problem: The B1270 won't answer the phone.

- Check that the phone line is plugged into the LINE jack at the back and not the PGM jack.
- Check that the phone line is using the inner red/green pair, and not the outer black/yellow pair (normally reserved for line 2).
- Check that the B1270 is configured to answer the phone, using Program Code 4. If the number of rings before answering is set to 0, the B1270 will never answer the phone.
- Answering the telephone is a low priority command within the B1270. The unit will only answer the telephone when it is not performing another operation, such as speaking on the radio, local programming, or controlling its relays. Counting of rings only begins once the unit is in its idle state.
- Check that the ringing voltage on the telephone line exceeds 40 VAC at 20 Hz. The RING LED located on the front panel will indicate if proper ringing voltage is being received. If it is not, it may be possible to modify the B1270 to detect the lower ringing voltage. Contact Barnett Engineering Ltd.
- Check that the telephone line has a standard ringing cadence of two seconds on, four seconds off. If the ringing cadence is greatly different, it may not be detected. Contact Barnett Engineering Ltd. to see if a software modification is possible to overcome this problem.

Problem: The B1270 will not acknowledge.

- Check that you are sending the correct digits. The acknowledge code can be changed using Program Code 3.
- If the B1270 is not acknowledging over radio, it may be necessary to adjust the receive level of the radio.
- If the B1270 is not acknowledging over the telephone line, check that you are using a tone telephone.
- Check that the DETECT LED on the front panel of the B1270 lights when a DTMF digit is received. If it does not, it may indicate a problem with the telephone line.

Problem: The B1270 does not activate its relay when I send the DTMF code.

- Check that you are sending the right digits. The relay ON/OFF codes can be changed by using Program Code 3.

- Check the relay ON time in the Advanced Configurations (Program Code 6). If the setting is 0, the relay will stay ON until it is commanded OFF. For any other setting, the relay will only operate for the programmed number of seconds.

- If the relays do not operate from codes sent over the radio, check the level of the radio's received audio.

- If the relays do not operate from codes sent over the telephone, check that you are using a tone telephone.

- Check that the DETECT LED on the front panel of the B1270 lights when a DTMF digit is received. If it does not, it may indicate a problem with the telephone line.

Problem: Our operators live in an area which has a dial pulse exchange. How can they acknowledge the B1270 when it calls?

- Even though the operators have rotary phones, they can still send tone codes if they have a DTMF pad, purchased separately, which sits by the phone.

- The B1270 may be programmed to automatically acknowledge after eight rings. Thus if the B1270 calls an operator with a dial pulse phone, the operator can hang up after he hears the message, call the B1270 right back, let the phone ring eight times, and the B1270 will recognize that as an acknowledgment. Set the number of rings before answering to # in the Configuration section (Program Code 4), and enter a * after the telephone numbers of dial pulse phones in the directory (Program Code 2 - Phone Directory) to allow time for them to call the B1270 back.

Problem: How can I prevent unauthorized personnel from calling up the B1270 and altering its programming?

- In its default condition, the B1270 does not require any type of password. If you wish to enter one, refer to the Access Code in the DTMF Tones section (Program Code 3). If an Access Code is programmed, anyone calling the B1270 will receive a report of its status, but it will prompt the caller to enter the Access Code before allowing them into the programming mode.

Problem: Can I use the * character as part of my DTMF strings? Won't this be confused with the "Enter" code?

- The # and * characters may be used as a part of any programmable DTMF string. The only time you must be careful is when entering an asterisk (*) as the last digit in a string. Be sure to wait more than one second after entering

the last digit before hitting Enter (**); otherwise the last * will be interpreted as part of the Enter code.

Problem: The B1270 has lost its programming.

- On-board battery back-up should retain the programming of the B1270 for 30 days or more without power applied. Check to see how long the unit has been without power.

- As it runs, the B1270 is constantly performing internal self-checks, and on rare occasions it may find that a memory location has been corrupted. If that happens, the B1270 resets all programmed parameters (except the voice messages) to the default values. At the same time, it will announce *Program Code Error* over the radio. As the telephone directories have been lost, the B1270 cannot dial out to report the failure over the phone. The only way you will be able to tell that something has gone wrong is by phoning the B1270; it will announce a *Program Code Error* as soon as it answers the phone. In order to have some local indication that an error has occurred, hook a local speaker into the radio connections.

The most common causes of a memory loss are power spikes which enter the board through the +12VDC, GND, telephone line, or radio connections.

Problem: I tried to change the telephone numbers and now the B1270 will not dial out at all.

- If you are using Directory A only, check that the directory has not inadvertently been changed to Directory B. This can happen when you are in the programming mode if you forget to accept the Directory Format (**) before hitting 2** to change a telephone number. To avoid this potential problem, it is a good idea to program the same telephone numbers into Directory B as Directory A.

Warranty Statement

Barnett Engineering Ltd. warrants that all equipment supplied shall be free from defects in material or workmanship at the time of delivery. Such warranty shall extend from the time of delivery for a period of one year. Buyer must provide written notice to Barnett Engineering Ltd. within this prescribed warranty period of any defect. If the defect is not the result of improper usage, service, maintenance, or installation and equipment has not been otherwise damaged or modified after delivery, Barnett Engineering Ltd. shall either replace or repair the defective part or parts of equipment or replace the equipment or refund the purchase price at Barnett Engineering LTD.'s option after return of such equipment by buyer to Barnett Engineering Ltd. Shipment to Barnett Engineering LTD.'s facility shall be borne on account of buyer.

(1)Consequential Damages: Barnett Engineering Ltd. shall not be liable for any incidental or consequential damages incurred as a result of any defect in any equipment sold hereunder and Barnett Engineering LTD.'s liability is specifically limited to its obligation described herein to repair or replace a defective part or parts covered by this warranty.

(2)Exclusive Warranty: The warranty set forth herein is the only warranty, oral or written, made by Barnett Engineering Ltd. and is in lieu of and replaces all other warranties, expressed or implied, including the warranty of merchantability and the warranty of fitness for particular purpose.

Specifications

<i>Alarm inputs</i>	8, optically isolated, 10mA to operate, ground closure required.
<i>Control Outputs</i>	4 independent form C outputs controlled by programmable DTMF codes.
<i>Telephone Connection</i>	RJ11; tone or pulse line.
<i>Programming Connection</i>	RJ11; accepts a standard telephone.
<i>Receive Audio</i>	-20 dBm to 0 dBm, 10 k ohm impedance; unbalanced, AC coupled.
<i>Transmit Audio</i>	-20 dBm to -10 dBm, 600 ohm impedance, unbalanced, AC coupled.
<i>Channel Busy (COS)</i>	0 to 8.5 V input level, 10 k ohm impedance, adjustable by potentiometer
<i>PTT</i>	Open collector driver, 40 V max, 150 mA max.
<i>Acknowledge Input</i>	Ground closure.
<i>Voice Quality</i>	Digitized, toll quality, 32 kbps, ADPCM.
<i>Power</i>	+11.5 VDC to +16 VDC, 70 mA standby current, 25 mA per relay.
<i>Environment</i>	-20°C to + 60°C, 95% relative humidity, non-condensing.
<i>Physical</i>	Enclosure is 8.5" X 7" X 2.5".
<i>Approvals</i>	FCC Part 68, FCC Part 15 - Class A, Industry Canada CS-03 Part I Issue 7, CSA C22.2-225-M90; complies with UL 1459 - Telephone Equipment

Appendix A - Unit Identification Table

The unit identification table is used to record all of the programmed parameters within the B1270.

Unit Identification Table

Unit Name _____

Expander Number _____

Expander Site ID _____

TELEPHONE

Directory Format _____ [1]

Telephone Numbers

Directory A -

#1	_____	[empty]
#2	_____	[empty]
#3	_____	[empty]
#4	_____	[empty]
#5	_____	[empty]
#6	_____	[empty]
#7	_____	[empty]
#8	_____	[empty]

Directory B -

#1	_____	[empty]
#2	_____	[empty]
#3	_____	[empty]
#4	_____	[empty]
#5	_____	[empty]
#6	_____	[empty]
#7	_____	[empty]
#8	_____	[empty]

DTMF CODES

Acknowledge Code _____ [1234]

Access Code _____ [empty]

Alarm ON/OFF Output Codes

#1 ON _____ [empty]
#1 OFF _____ [empty]
#2 ON _____ [empty]
#2 OFF _____ [empty]
#3 ON _____ [empty]
#3 OFF _____ [empty]
#4 ON _____ [empty]
#4 OFF _____ [empty]
#5 ON _____ [empty]
#5 OFF _____ [empty]
#6 ON _____ [empty]
#6 OFF _____ [empty]
#7 ON _____ [empty]
#7 OFF _____ [empty]
#8 ON _____ [empty]
#8 OFF _____ [empty]

Relay ON/OFF Input Codes

#1 ON _____ [empty]
#1 OFF _____ [empty]
#2 ON _____ [empty]
#2 OFF _____ [empty]
#3 ON _____ [empty]
#3 OFF _____ [empty]
#4 ON _____ [empty]
#4 OFF _____ [empty]

Remote Alarm Input Codes

#1 _____ [empty]
#2 _____ [empty]
#3 _____ [empty]
#4 _____ [empty]
#5 _____ [empty]

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#6	_____	[empty]
#7	_____	[empty]
#8	_____	[empty]

Interrogate Code _____ [5678]

CONFIGURATION

Radio Cycles _____ [0]

Rings Before Answer _____ [4]

Interval Timer A _____ [2]

Interval Timer B _____ [10]

Times A _____ [3]

SIGNALING

Repeats _____ [1]

Radio Delay _____ [20]

Radio Windows

#1	_____	[4]
#2	_____	[1]
#3	_____	[0]
#4	_____	[0]
#5	_____	[0]
#6	_____	[0]

ADVANCED CONFIGURATIONS

NO/NC Alarm Format _____ [0]

Dial Format _____ [0]

Squelch Polarity _____ [0]

Acknowledge Request _____ [1]

Relay ON Time

#1 _____ [4]

#2 _____ [4]

#3 _____ [4]

#4 _____ [4]

Octo Delay _____ [10]

Alarm Delay Time (Debounce Time)

#1 _____ [0.5]

#2 _____ [0.5]

#3 _____ [0.5]

#4 _____ [0.5]

#5 _____ [0.5]

#6 _____ [0.5]

#7 _____ [0.5]

#8 _____ [0.5]

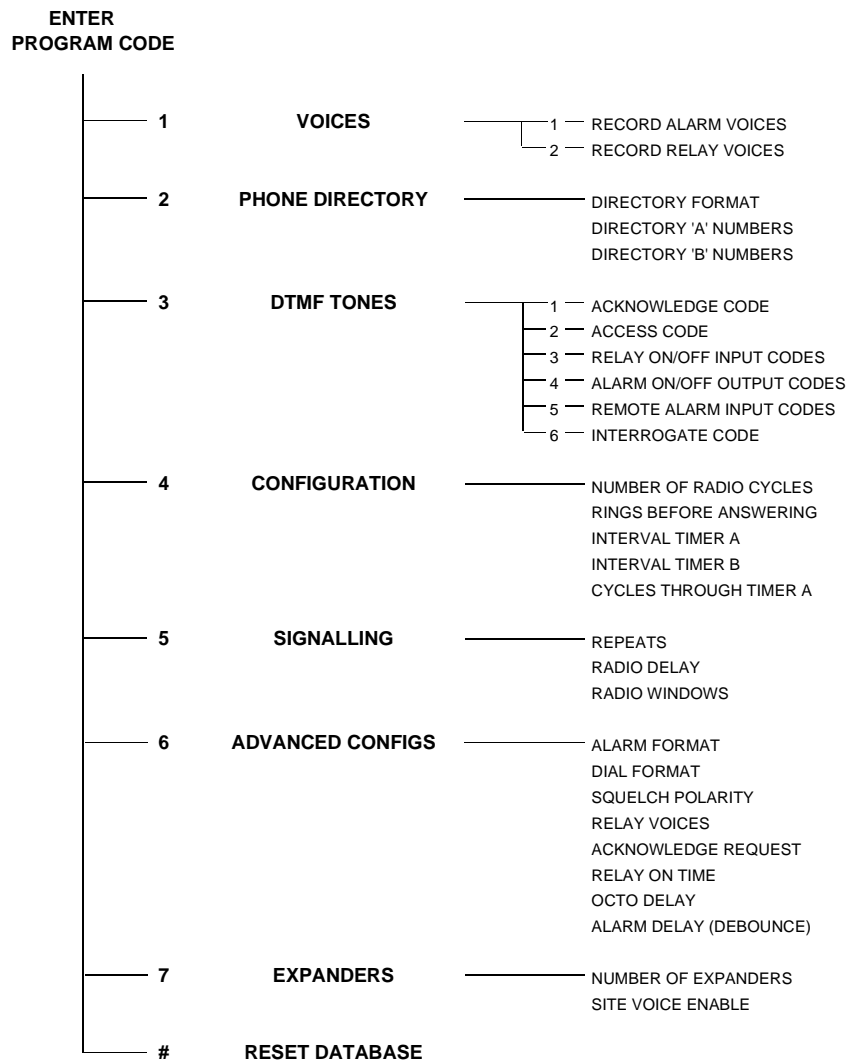
EXPANDERS

Site Voice Enable _____ [0]

Number Of Expanders _____ [0]

Appendix B - Programming Tree

The parameters used to program the ProTalk ARU are given as a summary on the next four pages. The first page gives an overview of all the parameters, which are described in further detail on the next three pages.



1 Voices

1 Record Alarm Voices	2 : Record # : Quit ** : Next
-----------------------	-------------------------------------

2 Record Relay Voices	2 : Record # : Quit ** : Next
-----------------------	-------------------------------------

2 Phone Directory

Directory Format	1 : A Only 2 : B Only 3 : A Split B
------------------	---

Directory 'A' Numbers	
Directory 'B' Numbers	2 : Change 3 : Delete 4 : Insert # : Quit ** : Next

3 DTMF Tones

1 Acknowledge Code	digits : Change ** : Quit
--------------------	------------------------------

2 Access Code	digits : Change # : Clear ** : Quit
---------------	---

3 Relay ON/OFF Input Codes	digits : Change # : Clear ** : Next
----------------------------	---

4 Alarm ON/OFF Output Codes	digits : Change # : Clear ** : Next
-----------------------------	---

5 Remote Alarm Input Codes	digits : Change # : Clear ** : Next
----------------------------	---

6 Interrogate Code	digits : Change ** : Quit
--------------------	------------------------------

4 Configuration

Number of Radio Cycles	digit : Change ** : Continue
------------------------	---------------------------------

Rings Before Answering	digit : Change 0 : No Answer # : Auto Ack After 8 ** : Continue
------------------------	--

Interval Timer A	digit : Change ** : Continue
------------------	---------------------------------

Interval Timer B	digit : Change ** : Continue
------------------	---------------------------------

Cycles Through Timer A	digit : Change ** : Quit
------------------------	-----------------------------

5 Signalling

Repeats	digit : Change ** : Continue
---------	---------------------------------

Radio Delay	digit : Change ** : Continue
-------------	---------------------------------

Radio Windows	0 : Empty 1 : Voice 2 : 2 Tone 3 : Single Tone 4 : Alert Tone 5 : 5 Tone 6 : DTMF 7 : Delay # : Quit ** : Next
---------------	---

6 Advanced Configs

Alarm Format	0 : N.O. 1 : N.C. 2 : N.O. Latched 3 : N.C. Latched ** : Continue
--------------	---

Dial Format	0 : Tone 1 : Pulse ** : Continue
-------------	--

Squelch Polarity	0 : Tx on Low 1 : Tx on High ** : Continue
------------------	--

Relay Voices	0 : Voices Off 1 : Voices On ** : Continue
--------------	--

Acknowledge Request	0 : Off 1 : On ** : Continue
---------------------	------------------------------------

Relay On Time	digits : Change ** : Continue
---------------	----------------------------------

Octo Delay	digits : Change ** : Continue
------------	----------------------------------

Alarm Delay (Debounce)	digits : Change ** : Next
------------------------	------------------------------

7 Expanders

Number of Expanders	digit : Change ** : Next
---------------------	-----------------------------

Site Voice Enable	0 : Off 1 : On
-------------------	-------------------

Reset Database

	#31 : Clear Database else : unchanged ** : unchanged
--	--