



Mine Net Text Messenger

User Manual

Model: MN-6210

AMR Part Number: 180-0621

Version I

This user manual contains all the guidelines and steps in order to operate the Mine Net Text Messenger.

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Cautions and Warnings

- Avoid placing excessive force on the display, the display is easily damaged.
- Avoid dropping the unit.
- Do not use any type of tool to operate the keypad, use only your fingers.
- The display is not a touch screen, avoid touching it with any type of tools.

Basic Troubleshooting

The MN-6210 Text Messenger is a sophisticated device that is designed to be repaired and serviced by the manufacturer or authorized agents only. If there are any reasons to believe the messenger has malfunctioned then contact AMR at (276)-928-1712 for repair.

If the text messenger appears to be frozen, or locked up, then you can reset the device by turning power off by using the button located at the bottom of the unit, and then turning it back on.

Specifications

Batteries:

Type: Nickel-Metal Hydride Rechargeable AA

Manufacturer: Sanyo HR-3U

Capacity: 2500 mAh

Charge Time: 5 ½ Hours (Quick charge from discharged battery condition)

Life¹:

Standby/Idle (no usage)²: 93.63 Hours

Standard Usage (80/10/10)³:

59 hours (display at the lowest brightness setting)

56 Hours (display at the medium brightness setting)

51 Hours (display at the highest brightness setting)

Range:

Messaging⁴: 450' to 525'

Tag Tracking⁴: 130' to 150'

¹ Calculations only, not tested

² 100% idle, no transmission, reception, or other usage

³ Defined as 80% idle, 10% transmitting, 10% receiving

⁴ Approximations only, actual values will vary in different environments

Basic Overview

Button Layout

The button layout on the messenger keypad is arranged in a 3 x 3 grid which offers nine different buttons. The keypad and messenger is designed so that buttons A,B,C,F,G,H, and I correspond to the boxes along the outer edge of the screen when in the menus, this allows for the buttons to be generic and have multiple uses in order to reduce key count and make it easier to use. There are two buttons on the keypad that are dedicated and they are the up arrow /space button and the down arrow/backspace button. *Figure 1*, below, shows the keypad layout of the messenger with letter overlays (they are not actually on the messenger, just in the image) along with their descriptions/references in Table 1. For instance later in the manual if one of the steps is to press the upper right button it would be button G in *Figure 1*.



Figure 1. Button Layout

Button	Reference in Manual
A	Upper left button
B	Middle left button
C	Bottom left button
D	Up arrow – Used to navigate lists, moving the arrow up Space – Used when writing messages to add a space
E	Down arrow – Used to navigate lists, moving arrow the down Backspace – Used when writing messages to delete the previous character
F	Bottom middle button
G	Upper right button
H	Middle right button
I	Bottom right button

Table 1. Buttons versus Reference in Manual

Signal Strength Meter

The signal strength meter is shown with five different symbols, depending on the previous signal strength read. **Table 2**, below, lists the five different symbols that may appear while using the messenger. Unfortunately there isn't a distance that can be placed with each tier except the highest value, if the messenger is showing the highest value then it is assured that it is within a close proximity to a Mine Net reader or a Mine Net wireless PAD device. Refer to box three in **Figure 2**, on page 9, to find to location of the signal strength meter.






Signal Strength Symbol	Description
	No signal detected
	Weak signal detected. There is one signal bar that has an orange color.
	Low signal detected. There are two signal bars that have a yellow color.
	Medium signal detected. There are three signal bars that have a green color.
	High signal detected. There are four signal bars that have a green color and this represents the closest distance to a reader or a PAD.

Table 2. Signal Strength Symbols and their Descriptions

Battery meter

The battery meter symbol is located in the upper right corner of the screen when the menus are displayed. Each symbol is given a different color which is found in *Table 3*, which gives the user a quick and easy reference to the current battery condition. Each level is approximately a quarter of the total battery capacity. Refer to text box 4 in *Figure 2*, on page 9, to find the location of the battery level indicator.





Battery Level Symbol	Description
	Less than 1/4 th capacity
	1/4 th capacity to less than 2/4 th capacity
	2/4 th capacity to less than 3/4 th capacity
	Greater than 3/4 th capacity

Table 3. Battery Level Symbols and their Descriptions

New message indicator

The new message indicator on the menus is located to the upper left corner of the display. When the messenger receives a new message(s) the symbol will be drawn as a blue envelope. When the messages are read the envelope will be drawn as a grey envelope. Refer to box one in *Figure 2*, on page 9, to find the location of the message envelope.

Grey envelope = No recently received messages
 Blue envelope = New received messages

LED Color Guide

The LED found on the messenger is a single LED that can produce seven different unique colors including red, blue, green, teal, violet, yellow, and white. On boot up the messenger will go through the three main colors consisting of red, green, and blue as a test stage to make sure the LED is functioning. **Table 4**, below, lists each color possibility of the LED as well as providing a description of each LED color.

Color	Location	Description
Red	Charging	Indicates an error while charging. When the LED is red the messenger will disable the charging process. This can indicate that the power switch is not engaged.
Green	1) Charging 2) Receiving	1) Will go green once the messenger as reached a full charge (When the messenger is charging in the charge rack). 2) Will flash green when a new message has been received.
Blue	Charging	The blue LED will be on while the messenger is quick charging while on the charge rack.
Violet	UNUSED	UNUSED
Light Blue	UNUSED	UNUSED
Yellow	Charge Communication	Will flash yellow when data has been received and verified while on the charge rack.
White	Flashlight mode	Flashlight on/off control is found in the Settings and Tools menu.

Table 4: LED Color Guide

If a messenger is on the charge rack and the LED is active and someone wakes up the device to turn on the display the LED will turn off while the display is on and then light back up once the display turns off.

Turning on the messenger

To turn on the messenger, press the power button that is located at the bottom of the messenger. The power button is behind the black gasket and it will need to be pressed in until you feel it click. The button is designed to be difficult turning on and turning off to prevent accidental

presses while carrying the unit. When the button is pressed the unit will begin to boot up. While the messenger is initializing the screen will display:

“American Mine Research
Mine Net
Text Messenger
Rev: x”

While the text is shown on the display the messenger will also flash the LED's in a test cycle in the order of red, blue, green. If there is a contact list stored in the messenger, the yellow LED will begin to blink as the contact list is being built up for runtime access. When there is no text on the display and the LED's are finished blinking the messenger is ready to use and it is ready to receive messages.

Resetting the messenger

If at any time the messenger seems to become unresponsive like in the situation that the messenger will not wake up on a button press, the messenger can be reset by pressing the power button to turn it off. Then press the power button one more time until it clicks into place to turn the unit back on.

Main Menu

The main menu will be referenced often throughout the manual as a means of starting navigation through the menus. The main menu is easily identified by the button options such as “Write Message”, “Preset Message”, “Contact List”, “Settings and Tools”, “Sent Box”, “Inbox”, and “EMRG HELP”. The main menu also is the only menu that displays the user name and ID#. *Figure 2*, below, shows an image of the main menu, refer to the box labeled 5) User name and ID# to find the location.

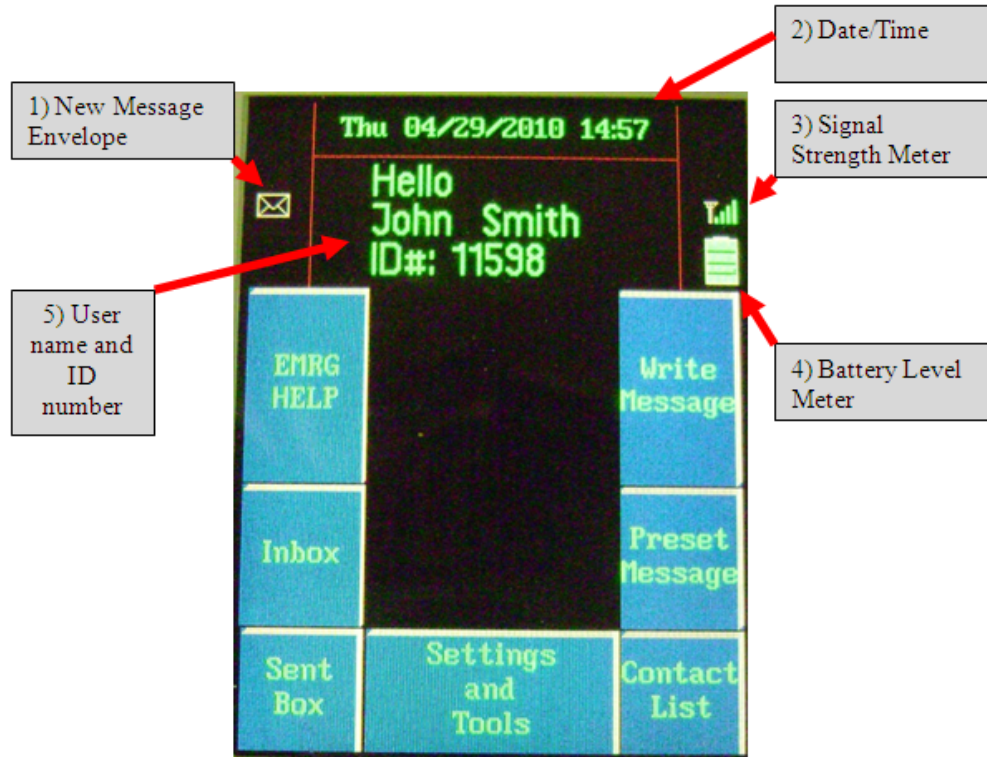


Figure 2. Image of the Main Menu

Date and Time

In *Figure 2*, above, the date and time is found at box two. The format of the date/time is as follows: Day of week, date, time. The time is display as a 24 hour clock which means the hour position continues to increment to 24 instead of rolling over at 12, this is often referred to as military time. The messenger does not feature a backup battery circuit for the clock so if the messenger is turned off and then turned back on at a later time then the date and time will be the same as when it was turned off. The time and date is there for convenience, it is not required to remain up to date for the functionality of the messenger. The date and time can be updated when the messenger is connected to the charge rack by using the charge communication program (refer to *Section Nine: How to Update the User Information* for more information).

Section One: How to Use the Contact List

In order to send messages to other messenger rather than to the surface or to a group, the user will have to utilize the contact list. There are two ways a user can access the contact list. The first way is through the main menu by pressing the bottom right button, "Contact List". The second method for accessing the contact list is found when a user has either entered a custom message or has selected a preset message and then on the next menu where the user configures the message, the bottom middle button will bring up the contact list. The current version of software (1.01 at this time) supports 2046 contacts.

First Contact List Screen

Narrow Contacts by Subgroups

The first part of the contact lists allows the user to narrow down the list by subgroups so if the user wanted to send a message to a person that they knew was a electrician then they would press the top left button, "Sort By", until the Group to View line says Electricians. Once the user has made the selection they would press the bottom middle button, "View". One of the subgroups is listed as general list which will display the entire contact list if that would be easier to navigate to the end user.

Search for a Contact by Last Name

If the user doesn't want to browse the list by a sub group then they can search for a person in the contact list by LAST name. To use the search feature, press the bottom left button, "Spell Name" in the first contact list menu. When the Spell Name button is pressed the screen will redraw with a text entry screen similar to writing a custom message. To search enter either part of or all of a person's last name and then press the top right button, "Find" to search for the user.

Second Contact List Screen

Using the Contact List

The contact list screen will list the contacts with nine entries per page. Large contact lists can easily be up to 100+ pages long. Fortunately, the page up/page down buttons (on the left side of the keypad) allows the user to go to the end of the list by pressing page up on the first page and press page down on the last page to go to the first page. This feature of wrapping pages allows a user to get to the beginning or the end of the list quickly. The contact list is displayed as last name, comma, and first name. For example, John Smith would appear as Smith,John in the

messenger. The list is also organized alphabetically by last name which will also speed up and make it possible to find names in a large list. To move the red arrow to a contact use the up/down buttons (when at the end of a page the user will have to press the page down button to move to the next page). Once the contact is found the user can either set that person as the user of the messenger (press the middle right button), search for their tag (press the bottom left button), or select the contact (bottom middle button) to address a message with their ID number. If searching for a name or browsing a group that does not have any contacts in it, the user will need to press the top right button, "Return" to go back one menu and try again.

Section Two: How to Send a Message

The Mine Net text messenger has the ability to send multiple types of messages. These include a custom keyed in message, selection of a preset message, or a quick emergency message. The custom message can contain up to 32 characters consisting of alphanumeric characters and symbols. The preset messages are preset by each Mine and they can be updated. The last type of message is the quick emergency message which will broadcast a message that has a message type of Emergency with the destination address set to global. The following sections will describe in detail how to send the different type of messages.

Creating a Custom Message

To create a custom message, wake up the messenger and in the main menu press the top right button on the keypad to “Write a Message”. If the user was in another menu when the display timed out then it will return to that previous menu, in order to write a message the user will have to return to the main menu.

This next window is the screen where the custom message is written. The message length is fixed at 32 characters and the messenger will keep count on the screen for the user. This will prevent the user from typing anything over 32 characters.

On this screen you will see seven boxes around the edges of the screen which correspond to the outer buttons.

The **top left** button will be the shift key that will cycle the text entry mode to switch between letters, numbers, and symbols. *Table 5*, below, shows which characters are entered in by the button used and the text entry mode.

Button to Press	Alphabetical Entry	Numerical Entry	Symbolic Entry
Middle Left	A B C D E	0 1	! “ #
Bottom Left	F G H I J	2 3	\$ % &
Bottom Middle	K L M N O	4 5	‘ ()
Bottom Right	P G R S T	6 7	* + ,
Middle Right	U V W X Y Z	8 9	- . / ?

Table 5. Text Entry Modes

For help on configuring the message and to send the message, refer to the following section on page thirteen, titled *Message Option Screen*.

Selecting a Preset Message

Each Mine may create a total of xx preset messages and load them into the messenger. These preset messages offer a quick method of sending useful and often used messages.

To send a preset message, at the main menu press the middle right button, “Preset Message”. The next screen will display the preset message list. There will be nine messages per page of the list. To change pages press the page up or page down buttons (the buttons on the left side of the keypad). To select a message, use the up/down buttons to move the red arrow to the desired message and then press the bottom middle button, “Select to Send”. For detailed information on how to set up the message and to send it, proceed to the following section, titled *Message Option Screen*, on page thirteen.

Sending a Emergency Message

In the event that an emergency message is to be sent, from the main menu press the upper left button, “EMRG HELP” **TWO** times. This will automatically send a hardcoded message with the unit’s ID number and the message type will be set to Emergency. This message will act as a global broadcast so every device will see it.

Message Option Screen

Once a custom message has been entered and the send msg button has been pressed, or a preset message is selected the next screen is where messages can be configured to send to certain groups, or sent to a person from the contact list. The next step would be to press the top right button, “Send Message”, which will transmit the message. By default the message will be set up to be sent to the surface system, or Mine Net, with a message type to Mine Net. The three components of this menu are explained in detail below. The bottom right button, “Cancel Message” is useful when it has been decided that the message is not needed any more. By pressing this button the screen will return to the main menu and discard the message. If the backlight on the screen should turn off while in this menu, it will restore back to the current view with the message stored when the screen is awakened the next time.

Change Message Type

The first topic to examine in detail is the ability to change the message type by pressing the top left button, “MSG Type”. This list will allow the user to select between nine different message types. In *Table 6*, below, the message types are explained in detail. If the desired destination is to Mine Net, then the message type does not need to be changed since it is always set as the default. To return the destination address back to Mine Net’s address if it has been changed, enter the change message type menu one more time and select to Mine Net.

Message Type	Addressing	Definition
To a Messenger	Select an address from contact list	This type will be set when a contact has been selected from the contact list.
To Mine Net	Mine Net's address	This type will be set when sending to Mine Net.
Global Message	Global	When this type is selected the message will be received by all devices no matter what their addresses are or their subgroup. There is no need to select an address.
To All Firefighters	To all members of the Firefighter group	When this type is selected the message will be sent to all firefighters, there is no need to select an address.
To All Rescue/EMT	To all members of the Rescue/EMT group	When this type is selected the message will be sent to all Rescue members, there is no need to select an address.
To All Electricians	To all members of the Electricians group	When this type is selected the message will be sent to all Electrician members, there is no need to select an address.
Emergency Message	Global, to all devices and surface	When this type of message is selected every device will receive the message including Mine Net. There is no need to select an address.
To All Foremen	To all members of the Foremen group	When this type is selected the message will be sent to all Foremen members, there is no need to select an address.
To All Mechanics	To all members of the Mechanics group	When this type is selected the message will be sent to all Mechanic members, there is no need to select an address.

Table 6. Message Types

To select a message type, use the up/down buttons to move the red arrow, once the arrow is on the desired message type, press the bottom middle button, "Select", to select the type.

Select a Contact

See *Section One: How to Use the Contact List* for more detailed information on how to use the contact list. Find the contact to send to then the messenger will place the information into the destination field.

Send the Message

After the contact and message type has been configured press the upper right button to send the message. The display will go black and it will then display text showing how many times it has tried to send the message. If the messenger receives an acknowledgement from another device in the appropriate time frame then the screen will say “Message has been sent”. If the messenger never receives an acknowledgement after three tries the screen will say “Message was not sent, please try again”. If the message failed, the user may go to the sent message menu (accessed from the main menu) and resend the message again.

Section Three: How to Receive a Message

The reception of message requires no interaction by the user so this section mainly covers the procedure of knowing a message was received; how to read the message; and how to respond to the message.

Message Indication

When a message is received, the first indication the user will notice is that the messenger will go through a cycle of producing a sound along with a vibration, and the LED lights at the top of the unit will blink GREEN. This alert can be canceled by pressing one of the outer buttons.

If a new message was received and the wakes the messenger up, the new message indicator is shown as a blue envelope in the top left corner of the messenger.

The Read Menu

To read a message in the main menu, press the middle left button to enter the read menu. In this menu, the user will see all of the messages that the messenger has received. New unread messages will be displayed as green text, while messages that have been previously read will be displayed as grey text. To read a message, press one of the two buttons that have vertical arrows printed on them, these buttons are the dedicated up/down buttons to control the arrow movement. To the upper right of the read menu the user will find the page number formatted as current page over the total number of pages. If the total number of pages is more than one, then the user can press the page up/page down buttons (middle left and top left buttons) to reach those pages.

If the arrow is at the bottom of the page and there are more messages on the next page, pressing the down button will not go to the next page, the user will need to press the **page down** button.

To read a selected message, press the bottom middle button which will bring up the message and it will also show who the message was from and the type of message.

The user has the option to erase the entire inbox by pressing the middle right button. This will erase and clear all of the messages in the inbox. The messenger will store up to 24 messages at one time but the user is not required to delete them once the max has been stored as the messenger will overwrite the oldest messages with the newest messages.

Reading a Message

When reading a particular message that was selected, the user has the option to reply to the message with a custom message, reply to the message with a preset message, or to delete the current message.

To delete the current message press the top left button, “Erase”, in order to delete the current message. This feature gives the user flexibility to delete individual messages instead of deleting the entire inbox.

To reply to the message with a custom message press the bottom right button. Pressing this button will bring up the text entry menu just like writing a message; from this point on refer to *Section Two: How to Send a Message* for more details on sending and configuring a custom message.

To reply to the message with a preset message, press the bottom left button. Pressing this button will bring up the preset menu listing all of the stored preset messages. Refer to *Section Two: How to Send a Message* for more detailed information on sending and configuring a preset message.

Section Four: How to Search for a Tag

The text messenger has a mode that will allow it to search for any of American Mine Research's Mine Net tag in the surrounding area. To access this mode from the main menu press, the bottom middle button, "Settings and Tools". In the next menu press the middle right button, "Tag Search" to enter the tag searching menu. When the messenger enters this menu, the default setting is for the timer to turn off which will keep the display backlight from timing out and turning off while searching (this can be toggled on by pressing the upper left button labeled Toggle Timer On/Off). To begin searching for a tag, press the bottom middle button, "Scan Area for Local Tags". The messenger will now proceed to scan for local tags for approximately 30 seconds and then it will display a list of the found tags. The tags will be listed with a [*name, number*] if the tag identification number is in the contact list and if the identification number is not in the contact list then it will be listed with just the number. Use the up/down buttons to move the red arrow to a number or use the page up/page down buttons to move to another page. Once the desired tag to track is found press the bottom middle button, "Select Tag" to bring up the tracking window.

The tracking window shows a red needle that moves from left to right as the signal gets stronger and on the other hand it moves from right to left as the signal weakens. Above the signal needle, the information from the tag is displayed such as the battery level, temperature, the tag message, signal strength, and the tag identification number. The needle will only update when a new tag is read. The can only be read in every couple of seconds at best so when searching it is helpful to move slowly. Press the upper right button, "Return", in order to return back to the first tag search menu.

Section Five: How to Change the Messenger Identification Number

The messenger can be addressed easily by one of two methods such as changing the identification number in the contact menu or by changing the number from the tag search.

Steps to Change the Identification Number through the Tag Search Feature

To change the messenger identification number through the search menu by scanning a tag, enter the search menu under the Settings and Tools menu (accessed from the main menu). Begin to search for local tags (refer to *Section Four: How to Search for a Tag* for more information) and use the up/down buttons or the page up/page down buttons to move the red arrow to a desired tag when the list appears. With the red arrow next to the desired tag, press the middle right button to apply that tags address and matching name to the messenger. A temporary window will pop up confirming that the ID has been changed. In the main menu the user should see that the name and number has been changed.

Steps to Change the Identification Number through the Contact List Menu

To change the messenger identification number through the contact list, enter the contact menu and then view the contact list either by searching for a name, narrowing the results by group, or viewing the entire list (more on this in *Section One: How to Use the Contact List*). Use the up/down buttons and the page up/page down buttons (on the left side of the keypad) to navigate the list to find the contact. Once the contact is located and the red arrow is next to the name press the middle right button, “Set as ID”, to change the stored identification number and user name to memory. When this button is pressed a temporary window will pop up saying ID changed a confirmation. At the main menu the new user name and identification number should be displayed.

Section Six: How to Change User Options

The Mine Net text messenger offers several user changeable settings to allow customization between users. There are two options that control the timing for the display backlight and the time between entering like characters when writing custom messages. There is a user option for changing the brightness of the display and there is an option to change when the messenger replies with an auto acknowledge message⁵.

To find the list of user options, first awaken the messenger. From the main menu press the bottom middle button “Settings and Tools” and then press the bottom left button “Options”. This menu is the list of different user changeable settings.

Display Backlight Timeout Period

To change this setting, select the backlight timeout period from the list of options. The display backlight timeout is a scalable time period from five to 50 seconds in five second increments. The higher the time period, the longer the display will remain on between key presses giving the user more time to react or decide what to do. The timeout period can be changed by using the arrow up/down buttons to either increase or decrease the time. When the setting has been changed, the user will press the middle bottom button to save the setting. This setting will be saved to memory and be restored the next time the messenger is reset.

Text Entry Timeout Period

When the user is entering a custom message, there is a period of time that the user must wait when hitting the same button to display the next letter. For example if a user were to send the word FOOD they would have to wait a short period of time between entering the two O’s, if they proceed without waiting, then the unit would go to the next letter. Revisiting the example, if the user had written FO already and hit the button again too quickly wanting the second O they would end up seeing FK on the screen.

To change this setting, select the text entry timeout from the list of options. The text timeout period is scalable between one second and 10 seconds. This option is changeable by using the up/down buttons to select either a higher or lower setting. When the user has found the period they wish to use, push the middle bottom button to save the setting. This setting will be saved to memory and will be restored the next time the messenger is reset.

⁵ An auto acknowledgement message is a message that is sent to the sender either when a message has been received, read for first time.

Display Brightness Level

The messenger offers an option to choose between three brightness levels for display. The lowest brightness level is perfect for underground use while it may be difficult to see/operate outside or in a building. One word of warning, the higher the brightness setting, the more current the messenger will draw. There is roughly a 30mA difference in current draw between the highest and lowest brightness setting.

To adjust the brightness levels select the brightness setting in the list of options. To change between the brightness levels, use the up/down arrow buttons and then press the middle bottom button to make the change. This setting is saved to memory and it will be restored the next time the messenger is reset.

Auto Acknowledgment Messages

The messenger has the ability to send a preset message out either when a message is received, if a message is read, or send a message when a message is received and read. The option of using this function will be left up the Mine personnel using the messenger. This option is different from a acknowledgement packet between two radio devices. Having the option of send auto acknowledgment messages users will be able to receive and read messages telling them that the message they sent has been received or read by the person to which it was sent.

When the “Auto send a read acknowledgement message” option is selected the messenger will automatically send a message to the source address with a message “Message Read” when reading a new message.

When the “Auto send a received acknowledgement message” option is selected, the messenger will automatically send a message to the source address with a message “Message Received”.

When “Auto send a read and received acknowledgment message” option is selected, the messenger will automatically send a message to the source address with a message of “Message Read” when reading a new message and a message to the source address with a message “Message Received” when receiving a new message.

When “No auto acknowledgment messages” option is selected then there won't be any acknowledgement messages automatically sent from the messenger.

To change the auto acknowledge message, go to the list of options and move the arrow down to the line that says “Message Acknowledge” and press the bottom middle button. The first thing the menu shows is the current setting, then below the line it will show the setting that is currently selected. To change a the setting, use the up/down buttons to cycle between the four options and then press the bottom middle button, “select”, to change the setting.

Section Seven: How to Use the Sent Menu

The sent message menu is a location where the previously sent messages are stored for future use. For instance, if a message was sent but it never received an acknowledgement, the user could go to the sent menu to resend the message. The sent menu offers the ability to resend a message or to forward the message to another address. The sent menu is accessed from the main menu by pressed the bottom left button, "Sent Box".

To resend a message, find the desired message in the list by using the up/down buttons or the page up/page down buttons (on the left side) and press the bottom middle button, "Resend Message", to resend the stored message. The messenger will immediately send the message out.

To forward a message, find the desired message in the list by using the up/down buttons or the page up/page down buttons (on the left side of the keypad) and then press the bottom left button, "Forward Message". The next screen will be the message configuration which is the same as send a message, found in Section Two: How to Send a Message, specifically under the Message Option Screen heading.

Section Eight: How to Charge the Messenger

To charge the messenger the user must have access to a powered charge rack offered by American Mine Research. Plug the messenger into the rack, making sure the power button is engaged and then pick one of the 10 existing cables and plug it into the charging slot located at the bottom of the messenger. If the batteries are completely drained, the messenger will go through the boot up process and the LED located at the top of the messenger will light up blue if the messenger is charging. If the batteries were still at an operating level when the unit was plugged in then the LED at the top of the messenger will become blue.

Troubleshooting

- 1) If there is no LED activity when the messenger is plugged in first check to make sure the charge rack has power.
 - a. If the charge rack has power but the messenger doesn't show LED activity, then there may be a hardware issue with the messenger and American Mine Research should be contacted for service.
- 2) If there is a red LED on the messenger then the messenger has encountered an error state and has shut off the charge process.
 - a. The easiest cause of the red LED to check is to make sure the power switch is engaged. If the messenger is not turned on when plugged into the charge rack then the battery voltage cannot be monitored while charging which will potentially lead to overcharging so the red LED will turn on and charging stopped when the messenger detects the switch not applied.

Section Nine: How to Update the User Information

Software setup on Computer

Before running the program make sure there is a USB cable connecting the computer to the charge racks. Each individual rack of ten messengers has a circuit board inside that converts the USB communication to a usable signal by the messenger. Connect the USB cables to the computer and open the charge communication program. If a window pops up saying it could not detect the USB device then double check the USB cables and restart the program.

The program for updating the messengers while charging is named MessengerData.exe and will be located in the same folder as MineNet. To run this program, double click on the MessengerData.exe file. *Figure 3*, below, shows the main screen for MessengerData.exe at the time of this manual. The top four buttons of the program are controls to send data to a messenger. The bottom three buttons are controls to edit and save the preset messages and emergency information.

Editing and saving of the preset messages or emergency information is the same so this will focus on walking through an example of adding a preset message and then saving the message. First click on the Preset Messages button under Edit Data. This will enable the numbers to the left, these are the individual messages, to add a new message click on a number until the Edit Message box shows up blank (If you want to change a previously saved message click on the number and edit the message that shows up in the Edit Message box). If adding a new message click in the blank box and type a message (up to 32 characters long) and then click on the Save Data button.

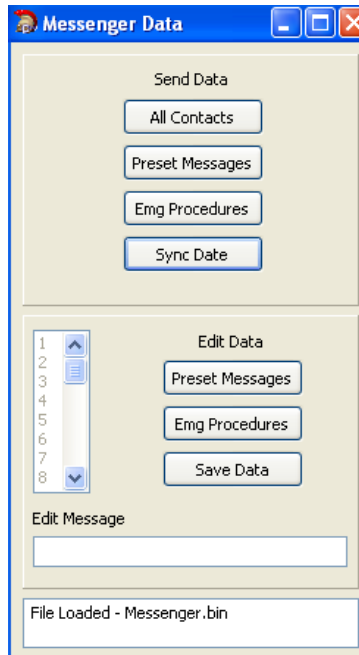


Figure 3. Messenger Charge Comm Program

Update Contact List on the Messenger

The contact list is updated on the messengers that are connected to the charge rack when the All Contacts button is pressed in the MessengerData.exe program. The program will packetize the personnel database from MineNet and send it to the Messengers. This process may take upwards of 30 seconds to a minute depending on the size of the personnel database. Upon successfully receiving the data the messenger will blink the LED yellow and it will also blink the LED yellow consecutively while building up the new contact list.

Update Preset Message List on the Messenger

The preset messages are updated in the messenger by running the MessageData.exe and clicking on the Preset Messages button under Send Data. Pressing this button will packetize the information found in Message.bin (includes default messages and custom entered messages when saved) and transfer it to the messengers connect to the charge racks. Upon successful reception of the packets the messenger will blink the LED yellow.

Update the Emergency Information List on the Messenger

Emergency information is updated in the same way as the preset messages but the user will click on the Emg Procedures button in the MessengerData.exe program. Upon successfully receiving the data, the messenger will blink the LED yellow.

Update the Date/Time

The date and time is easily updated by pressing the Sync Date button under Send Data. Upon successfully receiving the data, the messenger will blink the LED yellow.

Section Ten: Miscellaneous Items

Emergency Procedures

The messenger features a location for mine specific emergency procedures/emergency information such as emergency cache locations. The procedures are configured by the mine and then updated during charging. There is a maximum of xx procedures that can be stored. There is no user interaction here other than using the page up/page down buttons on the left side of the keypad.

To get to this list, from the main menu press the bottom middle button, “Settings and Tools”. Open the emergency procedures menu by pressing the top left button, “Emerg Proc”. The next menu press the top left button again, “Emerg Info” in order to view the list. Once the user is done with this menu press the upper right button, “Return” three times to return to the main menu. If the screen’s backlight times out while looking at the list it will restore to the list menu the next time the messenger is awakened.

Flashlight

The flashlight mode is found in the Settings and Tools menu. To access this menu from the main menu press the bottom middle button, “Settings and Tools”. To turn the flashlight on press the middle left button, “Toggle Flashlight” to turn on the flashlight. To conserve the battery life of the messenger the flashlight mode should not be left on indefinitely. To turn off the flashlight press the same button that was used to turn the flashlight on (the user must be in the same menu).

Appendix A. Installing Drivers for USB Charge Rack

- 1) When the new device is found windows will display a message saying it found the new hardware device and the Found New Hardware Wizard will show up. Follow figures one through 13 for a visual step by step guide on installing the drivers.



Figure 1

Click the circle pointed to by arrow A and then the Next button pointed to by arrow B.

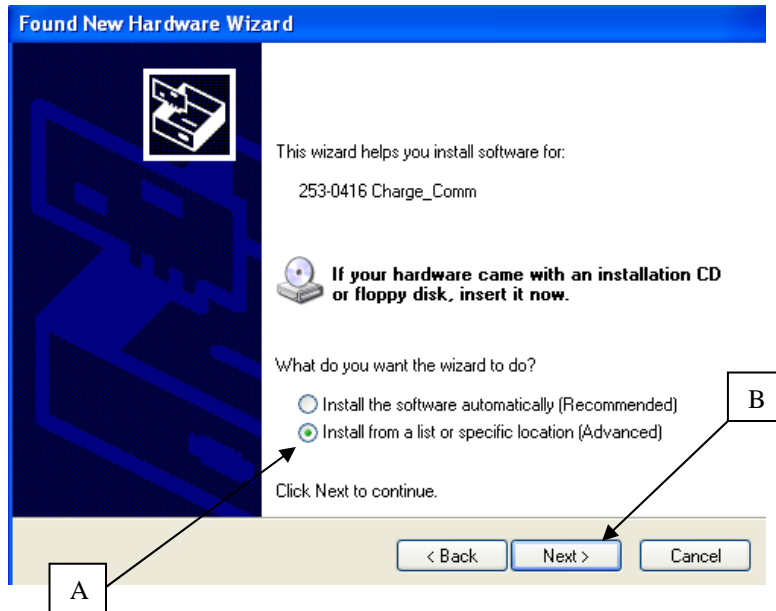


Figure 2

Click the circle pointed to by arrow A and then click the next button pointed to by arrow B.

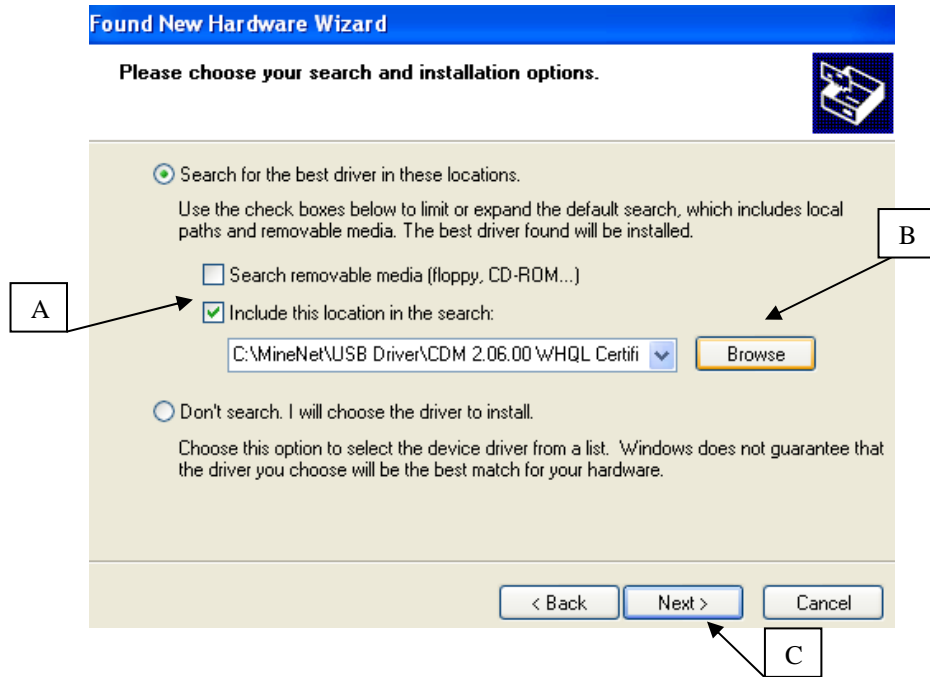


Figure 3

Click the box at arrow A, then browse to the desired driver folder located in the Mine Net installation folder\USB Driver\CDM 2.06.00 WHQL Certified. There are three different folders, one for each device. For example if you are installing a charge comm board then select the folder

named Charge_Comm DRIVERS. Once the driver location is found click the next button at arrow C.



Figure 4

Click the Continue Anyway button to proceed.

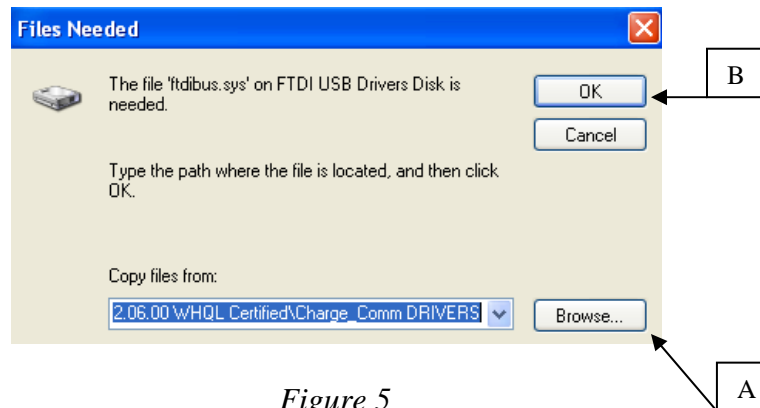


Figure 5

There will be a window that comes up asking for more files which are in the same folder, you will need to browse back to folder within Mine Net's Driver folder for the particular device you are installing. For example if you are installing the charge comm board, browse to the Mine Net installation folder\USB Driver\CDM 2.06.00 WHQL Certified\ Charge_Comm DRIVERS. Once the location is entered, click the OK button as shown at arrow B.



Figure 6

If everything went correctly the device is installed. Click the Finish Button.



Figure 7

There is a second device that may need to be installed and the Hardware Wizard will come up as shown. As before click the circle at arrow A and then the Next button at arrow B.

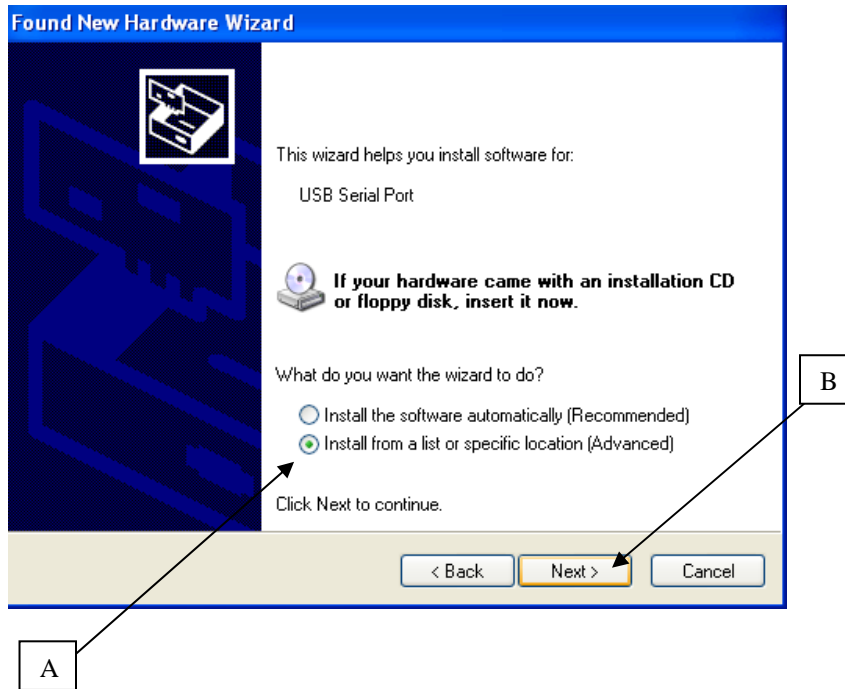


Figure 8

Once again click the circle at arrow A and then the Next button at arrow B.

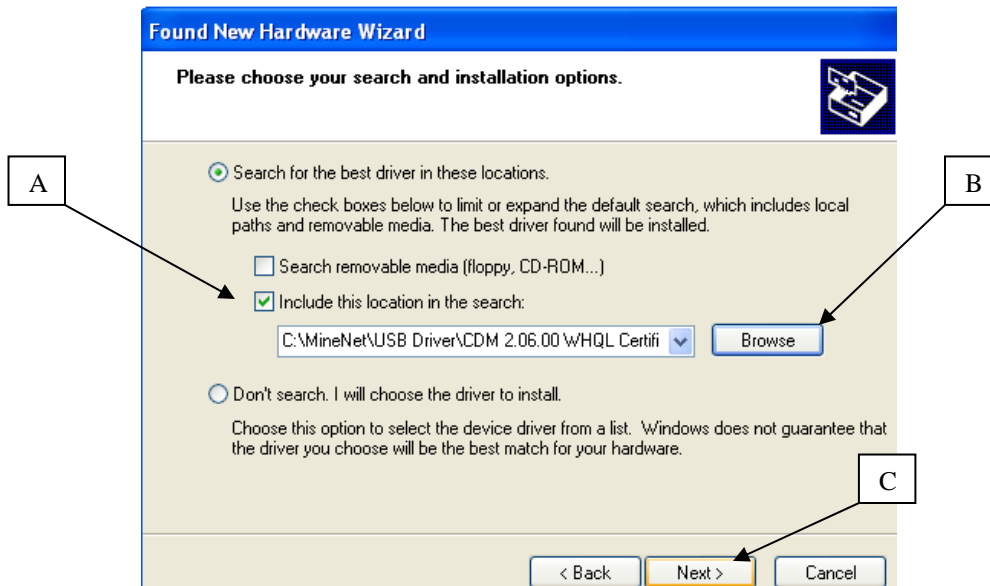


Figure 9

Once again check the box at arrow A and then click on the Browse button at arrow B. You want to go back to the driver folder which is found in the Mine Net installation folder\USB Driver\CDM 2.06.00 WHQL Certified. There are three different folders, one for each device. For example if you are installing a charge comm board then select the folder named Charge_Comm DRIVERS. Once the driver location is found click the next button at arrow C.



Figure 10

If the window in Figure 10 appears, click the Continue Anyway button to proceed.

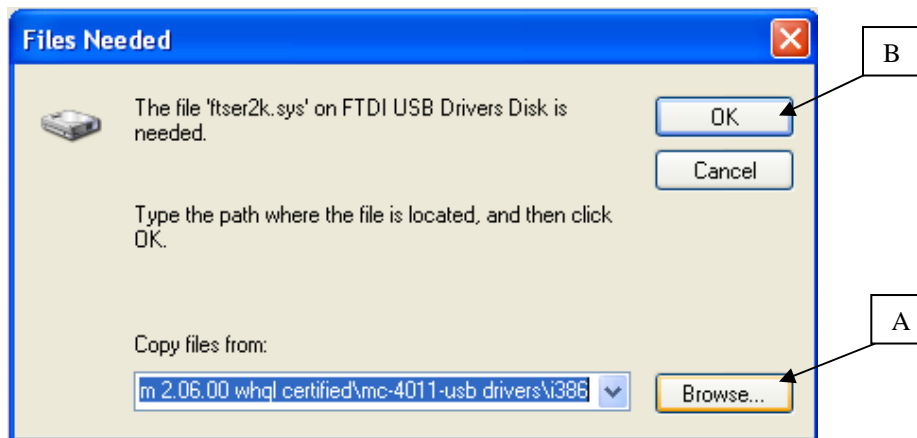


Figure 11

Once again, there will be a window that comes up asking for more files which are in the same folder, you will need to browse back to folder within Mine Net's Driver folder for the particular device you are installing. For example if you are installing the charge comm board, browse to the Mine Net installation folder\USB Driver\CDM 2.06.00 WHQL Certified\ Charge_Comm DRIVERS. Once the location is entered, click the OK button as shown at arrow B.



Figure 12

If everything went correctly the device is installed. Click the Finish Button.

- 2) Windows should display a Balloon pop up, as shown in figure 16, in the lower right corner of the monitor to alert you that the device is installed properly and is ready for use.



Figure 13