TV Liquidator
U.S. Distributor of LED Signs

Scrolling Remote Control LED Sign

Instruction Manual

Button Functions / Effects Table / Input Contents Table / Troubleshooting Guide

Distributed By:

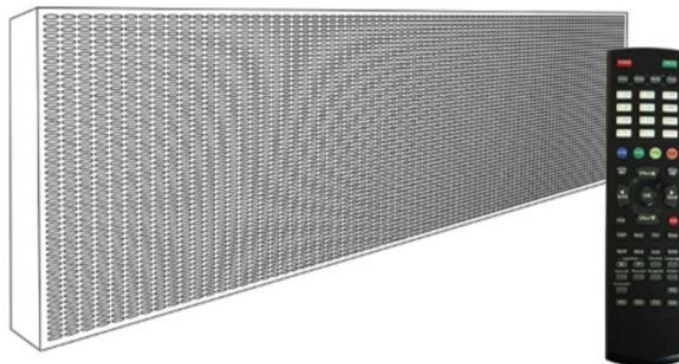**www.TVLiquidator.com**
Call to Order **1-888-885-7740**

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Check for All Components

Scrolling REMOTE CONTROL LED SIGN USER MANUAL

INSTRUCTION MANUAL

X 16   X 4

SCREWS & BRACKETS

AAA BATTERIES X 2

REMOTE CONTROL

Mounting Brackets

How to Use the Wall Brackets?

Slide the mounting brackets into the allotted slot on the frame of the sign. You may slide the brackets on the top, bottom or sides of the frame.

For Hanging Instructions:

Slide the brackets in the allotted slot on top of the sign. Use a chain to hook into the existing holes on the brackets. (Two options shown on the left). If you are planning to hang your sign in a window, please make sure the sign is at least 1 inch from the window. Any other type of installation may require different mounting methods that are not provided by the manufacturer.

Remote Control Button Functions

[POWER] Turn on and off
[MENU] Main Menu
[COLOR] Button to change color of each character
[ATTRIBUTE] Button to add/change effect of each
character
[WIDTH] Button to change width of each character
 (Not available in dual message)
[FONT] Button to change font of each character
(Not available in dual message)

[Keypad]
Letters & Numbers

[KOR] Button to change character to Korean
[eng] Button to change characters to Lower Case Letters
[NUM] Button to turn characters to Numbers
[DELETE] Button to delete character
[SPACE] Button to input a space
[◄ SPEED] Button to move cursor left or
to slow down effect speed
[► SPEED] Button to move cursor right or
to speed up effect speed
[▲ EFFECT] Button to scroll up the menu or
to change style of effect
[▼ EFFECT] Button to scroll down the menu or
to change style of effect
[OK] Button to confirm a selection
[COPY] Button to copy character or effect
[ESC] Button to cancel or to go back a step
[LIGHT] Button to add a glowing / dimming effect
[NEON] Button to add a Neon border.
(Up or down button will change effect of the border)
[FIX] Button to shrink or stretch letters to fit all fit
 onto one screen. (Not available for long messages)
[DEMO] Button to show sign demo "*LED Signs*"

[SPECIAL] Button to insert special or bigger characters
[MOVE] Button to choose one of the moving icons or images
[ICON] Button to input an Icon or picture
[SYMBOL] Button to enter symbol characters
[LANGUAGES] Buttons to turn message into that
Specific language.**[F1][F2][F3][F4][F5]** Buttons not supported

www.tvliquidator.com

Menu & Sub – Menu Options

1. **Add Contents** – *Create New Message*
   [1] Add Message
   [2] Add Dual Message
   [3] Add Image
   [4] Add Picture
   [5] Add Video
   [6] Display Date
   [7] Display Time
   [8] Add D-day
   [9] Add D-time
   [10] Add Temperature
   [11] Add Humidity
   [12] Add Event

2. **Modify Contents** – *Modify Messages*
   [1] Select Content to Edit

3. **Insert Contents** – *Insert New Contents*
   [1] Sentence Insertion
   [2] Dual Message Insertion
   [3] Image Insertion
   [4] Picture Insertion
   [5] Video Insertion
   [6] Display Date
   [7] Display Time
   [8] D-day Insertion
   [9] D-time Insertion
   [10] Temperature
   [11] Humidity

4. **Index Contents** – *Enable/Disable Content*
   [1] Select Content

5. **Delete Contents** – *Delete Message Content*
   [1] Delete Option
   [2] Delete All

6. **Stop Watch** – *Enable Stop Watch Feature*
   [1] Increment Mode
   [2] Decrement Mode

7. **Password** – *Prevents Unauthorized Changes to Sign*
   [1] Enter Password

8. **Set Time** – *Set Current Date/ Timer ON/OFF*
   [1] Set Time
   [2] Set Date
   [3] Set Timer ON
   [4] Set Timer OFF

9. **Setting Up** – *Additional Display Settings*
   [1] Reservation
   [2] Sound
   [3] Direction
   [4] Password
   [5] Brightness

10. **CDMA & 11. TPEG NEWS** – *Not Supported*

12. **Manager** – *Not for Customer Use*

Effects Table

After you input your message, the sign will ask you for three effects you would like to use for how the message will enter the display, how it will stay on the display and how it will leave the display. NOTE: When you choose an effect, the sign will display what it looks like before you press okay. If you would like to speed up or slow down the effect, press the arrow buttons that say speed. If you would like to see more effects, when the sign previews it hit the up or down arrow button that says effect to change the effect.

Insertion Effect – *The effect used on your message as it enters the display*

1) **Automatic** – Random Effects (If Chosen, No Preservation or Release Effect)
2) **3D Effect** – 3D Scroll or Regular Scroll
3) **Drama** – Curtain Effects in Multiple Forms
4) **Scroll** – Scrolling Effect for a Message that Fits onto the screen
5) **Gathering** – Merging Lines Left/Right/Up/Down/Diagonal
6) **Hurricane** – Rotating Effect From Different Directions
7) **Tornado** – Twisting Effect from Different Directions
8) **Lens** – Expands and Contracts Letters in Multiple Directions
9) **To Appear** –Displays Different Letters in Multiple Forms
10) **By Color** –Combines and Separates Colors Individually or in Groups
11) **Beam** – Laser Beam Effects from Multiple Directions
12) **No Effect** - No Effect Given

Preservation Effect – *The effect used on your message while it is holding on display*

1) **Drama** – Curtain Effects
2) **Reverse** – Inverse Color Effect
3) **To Shake** – Letters/Characters Shake Effects
4) **Hurricane** – Rotation Effect from Different Directions
5) **Tornado** – Twisting Effects from Different Directions
6) **Lens** – Expands and Contracts Letters in Multiple Directions
7) **Pause** – No Effect. Choose a Hold Time.

Release Effect – *The effect used on your message while it leaves the display*

1) **Drama** – Curtain Effects in Multiple Forms
2) **Scroll** – Scroll Up/Down/Left/Right
3) **Hurricane** – Rotation Effects from Different Directions
4) **Tornado** – Twisting Effect from Different Directions
5) **Dividing** – Divides Words from Different from Different Directions
6) **Lens** – Expands and Contracts Letters n Multiple Directions
7) **Erasing** – Erases Content from Different Directions
8) **By Color** – Combines and Separates Colors Individually or in a Group
9) **No Effect** – No Effect Given

NOTE:

If you do not want any effect on your message, choose the following:

1) **Insertion Effect - #12 No Effect**
2) **Preservation Effect - #7 Pause (Choose Hold Time.)**
3) **Release Effect - # 9 No Effect**

If you want your message to just scroll, choose the following:

1) **Insertion Effect - # 2 3D Effect**

When you choose the 3D Effect, hit the up arrow twice and you will be able to see your message scrolling (This is just a preview, not saved) Once you see it scrolling, you may hit the left arrow button as many times as you like. Once you find the desired speed press [OK] and the message will store. No other effect is needed.

How to Input Contents

[MENU]

1) How to Input a Message

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents** and press **[OK]**
- Now you will see **(1) Add Message** and press **[OK]**
- A blinking green line will appear on the sign, start to type your message in. There will be a blinking green box around your letter, the blinking box means that is the character you are currently editing. To move on to the next character, just type in the next letter. If there are letters you want to use that are on the same button, input the first character then hit the right arrow button to the next space and use the same button again.

  [NOTE:] After you input your first character, you can hit one of the functions below and the first character will change. The rest of the characters will follow the effect of the first character unless you choose another effect:
  [FONT] button to change the style of font
  [COLOR] button to change the colors
  [ATTRIBUTE] button to change the effects of the letters
  [WIDTH] button to choose how wide each letter will be
  [Move] and **[ICON**] buttons to choose smaller images to put into your message
  [NUM] button to change letters to numbers
  [ENG] button to change numbers to letters
  [SYMBOL] button to add symbols

- After you input your message press **[OK]** on the remote
- Now it will ask you for the **INSERTION EFFECT** and you can scroll through
- the 12 options on how you would like your message to enter on the sign.
- Select your **INSERTION EFFECT** (Effect used on the beginning of the message) and press **[OK]**
- Now it will ask you to choose a **PRESERVATION EFFECT** (Effect while your message is being displayed) Choose one of the seven effects and press **[OK]**
- Finally, it will ask you for **the RELEASE EFFECT** (Effect used as your message is leaving the display. Choose one of the nine effects and press **[OK]**
- The sign will now say **MESSAGE STORED** and you are done!

[OK]

[OK]

Use [KEYPAD] to Enter Your Message

Use [FONT], [COLOR], [ATTRIBUTE] and [WIDTH] to Customize Your Message

[OK]

Choose your 3 Effects and Press [OK]. You're Done!

2) How to Input a 2 Line Message

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents** and press **[OK]**
- Now you will see **(1) Add Message** hit the down button to
  (2) Add Dual Message and press **[OK]**
- A blinking green line will appear on the sign, start to type your message in
  for the top line.

  [NOTE:] **After you input your first character, you can hit:**
  [COLOR] button to change the colors
  [ATTRIBUTE] button to change the effects of the letters
  [NUM] button to change letters to numbers
  [ENG] button to change numbers to letters
  [SYMBOL] button to add a symbol

- After you input your top message press the down button on the remote to start
  the second line message. The blinking line will now be on the second line.
  (The message will center itself automatically when you are done.) When you are
  finished with the message press **[OK]**
- Now it will ask you for the **INSERTION EFFECT** and you can scroll through the
  12 options on how you would like your message to enter.
- Select your **INSERTION EFFECT** (Effect used on the beginning of the message)
  and press **[OK]**
- Now it will ask you to choose a **PRESERVATION EFFECT** (Effect while your
  message is being displayed) Choose one of the seven effects and press **[OK]**
- Finally, it will ask you for **the RELEASE EFFECT** (Effect used as your message
  is leaving the display) Choose one of the nine effects and press **[OK]**
- The sign will now say **MESSAGE STORED** and you are done!

TIPS

If you make a mistake you can hit the **[ESC]**
button to go back a step.

[ESC] Will take you to the previous step
[OK] Will take you to the next step

[MENU]

[1] Add Contents

[OK]

[⇩]

(2) Add dual Message

[OK]

Use [KEYPAD] to Enter Your
Message for the Top Line

[⇩]

TV LIQUIDAT

Use [KEYPAD] to Enter Your
Mesaage for the Bottom Line

[OK]

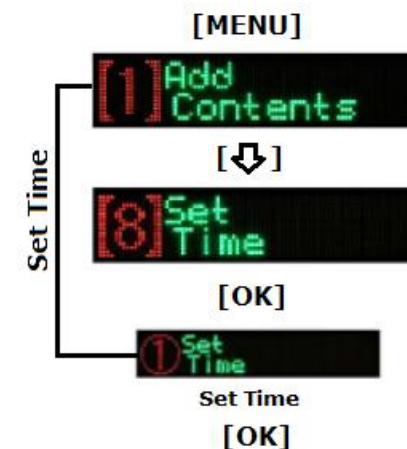Choose your 3 Effects and
Press [OK]. You're Done!

I stored

3) How to Display the Date

- Hit the **[MENU]** button on the top of the remote
- You will now see **(1) Add Contents**
- Hit the down arrow button until you see **(8) Set Time** and press **[OK]**
- You will now see **(1) Set Time**, hit the down arrow button to **(2) Set Date** and press **[OK]**
- Input the current date, Input the date as YY-MM-DD (Example: If you want the date to read June 7, 2014 you would input it as 14-06-07)
- When you are done press **[OK]** and it the sign will say "Present Date Stored"
- Now that the sign has the current date, we will want to make it display with our other messages. After it is stored it will bring you back to **(2) Set Date**
- Once you see **(2) Set Date**, press the **[ESC]** button and it will bring you back to **(8) Set Time**
- When you see **(8) Set Time**, hit the up arrow button to **(1) Add Contents** and press **[OK]**
- Now you will see **(1) Add Message**, hit the down arrow button until you see **(6) Display Date** and press **[OK].** It will now display the date and if it is correct then press **[OK]**
- Finally it will ask you for your insertion effect, preservation effect and release effect.
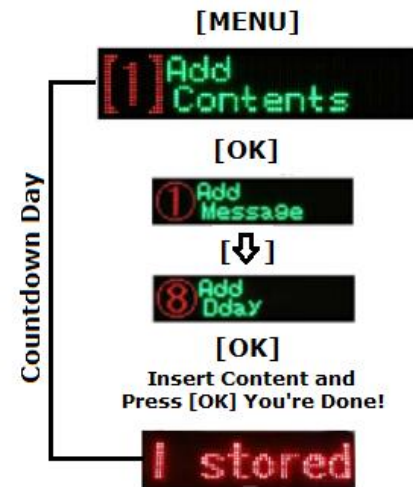

Set Date as YY-MM-DD

4) How to Display the Time

- Hit the **[MENU]** button on the top of the remote
- You will now see **(1) Add Content**
- Hit the down arrow button until you see **(8) Set Time** and press **[OK]**
- You will now see **(1) Set Time** and press **[OK]**
- You will now see A 12:00, with the blinking green box around the A. The A means am, to change A (am) to P (pm) hit the down arrow button. To change the hours, hit the right arrow button to the 12 and the blinking green box will be around the 12 and hit either up or down to change the number. To change the minutes, hit the right arrow key so the green box is around the 00 and hit either the up or down button to change the minutes.
- When you are done press **[OK]** and it the sign will say "Present Time Stored"
- Now that the sign has the current time, we will want to make it display with our other messages. After it is stored it will bring you back to **(1) Set Time**
- Once you see **(1) Set Time**, press the **[ESC]** button and it will bring you back to **(8) Set Time**
- When you see **(8) Set Time**, hit the up arrow button **to (1) Add Contents** and press **[OK]**
- Now you will see **(1) Add Message**, hit the down arrow button until you see **(6) Display Date** and press **[OK].** It will now display the time and if it is correct then press **[OK]**
- Finally it will ask you for your insertion effect, preservation effect and release effect

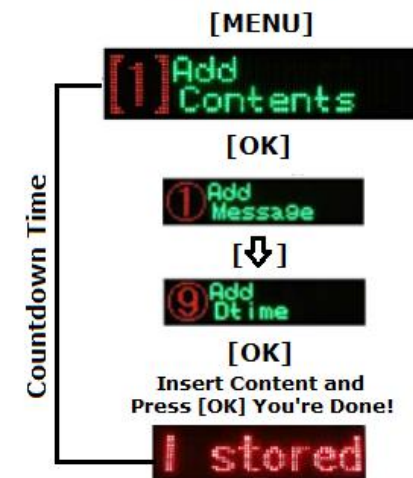Set Time

5) How to Add Countdown Days

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents** and press **[OK]**
- You will now see **(1) Add Message**, hit the down arrow button
  to **(8) Add D-Day** and press **[OK]**
- Select the date, Year/ Month/Day and hit **[OK]**
- Then it will ask you to input a sentence, this is what you want the
  sign to display with the countdown, for example, if you put "New Years Day"
  then the sign will display, "New Years Day D-100." D-100 represents the days
  remaining in the countdown.
- When you are done, press **[OK]** and it will store.

6) How to Add Countdown Time

(To use this feature, you must set the time into the sign first by using step 5)

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents** and press **[OK]**
- You will now see **(1) Add Message**, hit the down arrow button to
  (9) Add D-Time and press **[OK]**
- Select the Countdown time and hit **[OK]**
- Then it will ask you to input a sentence, this is what you want the sign to display
  with the countdown, for example, if you put "Special Sale" then the sign will
  display, "Special Sale_ Hours and _ Minutes."
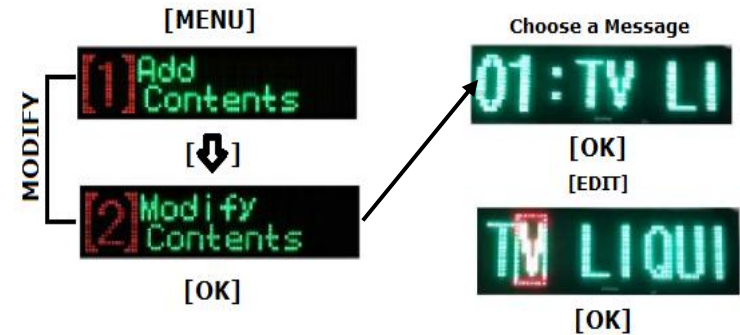- When you are done, press **[OK]** and it will store.

7) How to Choose an Image

- Hit the **[MENU]** button on the top of the remote
- You will now see **(1) Add Content**
- Hit the down arrow button until you see **(3) Add Image**.
- You may choose to use a picture for categories **(3) Add Image, (4) Add Picture**
  and **(5) Add Video**. Each category has many images that you may scroll through.
  When you find the image you want press **[OK]** and the image will be stored.
  [NOTE:] Remember there are hundreds of more images in the
  [MOVE] and **[ICON]** button. To use these images, create a new message in step 1
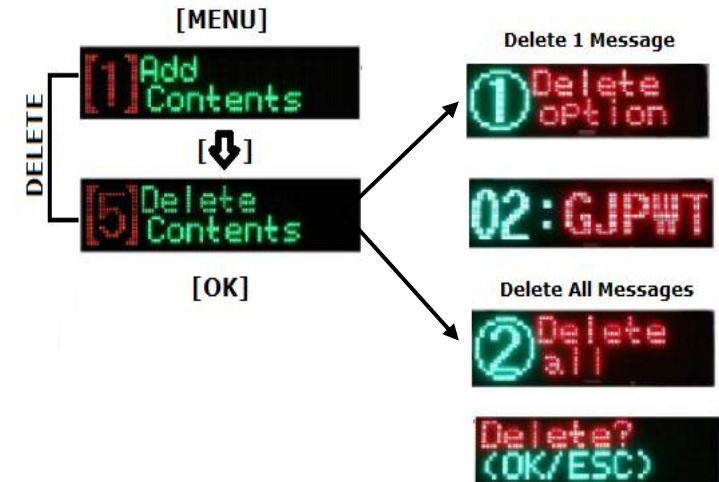 and hit either button to view the images. Scroll through them and press **[OK]**

8) How Modify Your Messages

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to
  (2) Modify Contents and hit **[OK]**
- You will now see, **"01: Your 1st Message"** and if you hit the down arrow
  you will see your other messages. Find message you want to edit and
  press **[OK]** on that message.
- The blinking box will be around the first character. Edit your message and
  when you are finished, press **[OK]**
- It will then ask you to choose your Insertion Effect, Preservation Effect
  and Release Effect.
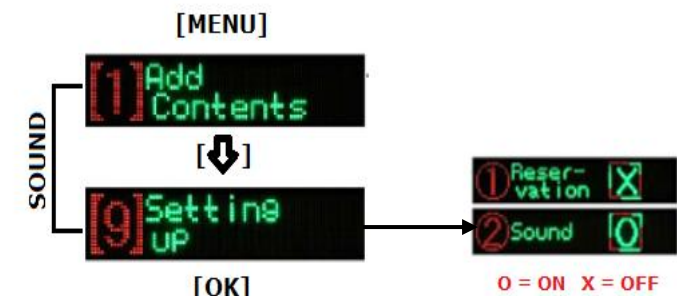- Once you choose the effects, press **[OK]** and you are finished.

9) How to Delete Contents

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to
  (5) Delete Contents and hit **[OK]**
- You will now see **(1) Delete Option**, click **[OK]** if you want to delete
  a certain message.
- It will now show you all your messages, find the message you want to delete
  and press **[OK].** It will say "Delete? (OK/ESC) if you want to delete the
  message press **[OK]** to cancel press **[ESC]**
- To delete all content, when you see **(1) Delete Option**, hit the down arrow
  button
  to **(2) Delete All** and press **[OK]**
- It will say "Delete? (OK/ESC) if you are sure you want to delete all contents
- press **[OK],** to cancel press **[ESC]**

10) How to Turn off Beeping Noise

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to **(9) Setting Up**
  and hit **[OK]**
- You will see **(1) Reservation**, hit the down arrow button to **(2) Sound**
- (2) Sound will have an "O" next to it, meaning that the sound is on, to turn it off
   hit **[OK]** and the "O" will turn to an "X"
- If you are done, hit the **[ESC]** button and then the **[MENU]** button to return.
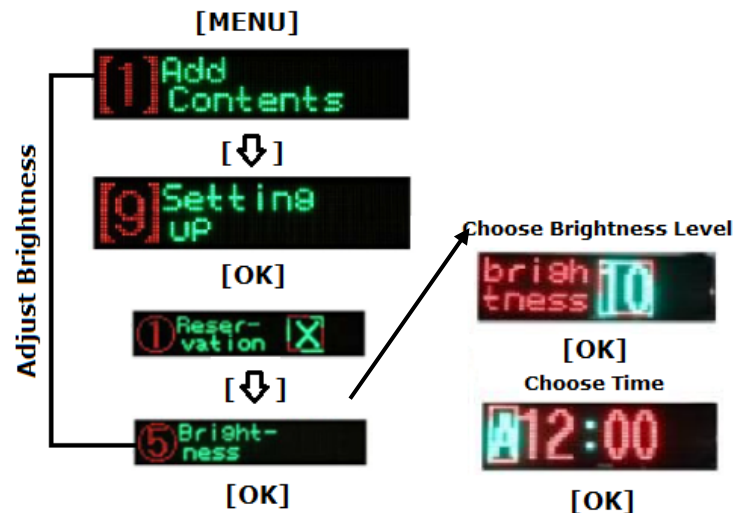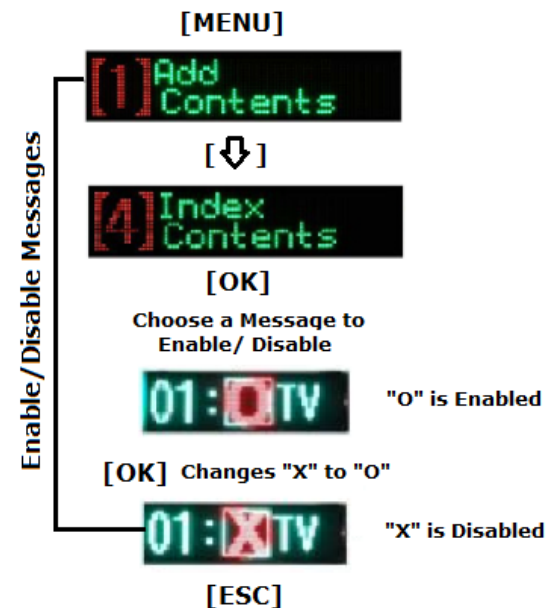
11) How to Select Certain Messages to Display

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to **(4) Index Contents** and hit **[OK]**
- You will now see " 01: O Your 1st Message Content" This means this is your first message in the sequence and the "O" means it is on and will display. To turn it off, hit the **[OK]** button and the "O" will turn into an "X".
- To see your other messages, hit the down arrow key and you will see " 02: O Your 2nd Message Contents" If you keep hitting down, you will see all of your messages.
- When you are done, hit the **[ESC]** button and then the **[MENU]** button to return to contents.

12) How to Adjust Brightness

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to **(9) Setting Up** and hit **[OK]**
- You will now see, **(1) Reservation**, hit the down arrow button to **(5) Brightness** and press **[OK]**
- It will now ask you to input a brightness level for the daytime (Levels 1-10) and press **[OK]** when you are finished. (Level 10 is the brightest and Level 1 is the Dimmest)
- Now it will ask you to input a brightness level for the nighttime (Levels 1-10) and press **[OK]** when you are finished.
- Now it will ask you what time do you want the brightness to change for the nighttime level, it will show A 12:00 with A meaning am. The blinking box should be around the A. To change the A (am) to a P (pm) hit the down arrow button.
- Next, hit the right arrow button to choose the hour and the blinking box should be around the hours, to change the hour hit the up or down button.
- When you are finished with the hours, hit the right arrow again to change the minutes, the blinking box should be around the minutes, hit the up or down arrow to change the minutes.
- When you are done, press **[OK]**
- Now it will ask you to choose a time for the brightness to change for the daytime. Choose the time the same way you did for the night and press **[OK].**

[MENU]

Enable/Disable Messages

[1]Add Contents

[⇩]

[4]Index Contents

[OK]

Choose a Message to Enable/ Disable

01:**O**TV   "O" is Enabled

[OK] Changes "X" to "O"

01:**X**TV   "X" is Disabled

[ESC]

[MENU]

Adjust Brightness

[1]Add Contents

[⇩]

[9]Setting uP

[OK]

①Reser- vation [X]

[⇩]

⑤Bright- ness

[OK]

Choose Brightness Level

brigh tness 10

[OK]

Choose Time

A12:00

[OK]

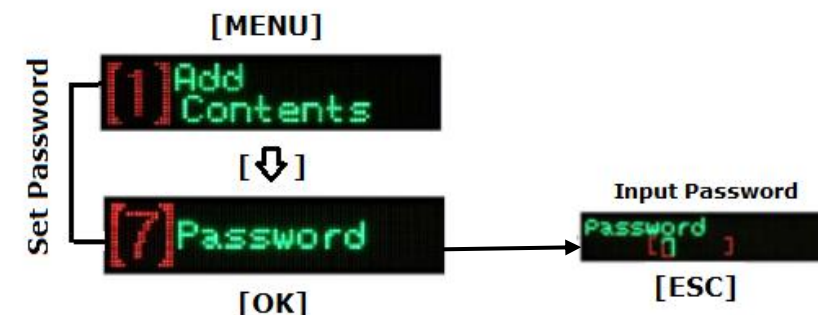## 13) How to Change Horizontal/Vertical Orientation

Warning: If you change from horizontal to vertical or the other way around, it will automatically delete all content.
- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to **(9) Setting Up** and hit **[OK]**
- You will see **(1) Reservation**, hit the down arrow button to **(3) Direction**
- If you press **[OK]** will it change it the orientation. When you are done changing it, do not hit the [OK] button again or it will turn it back,
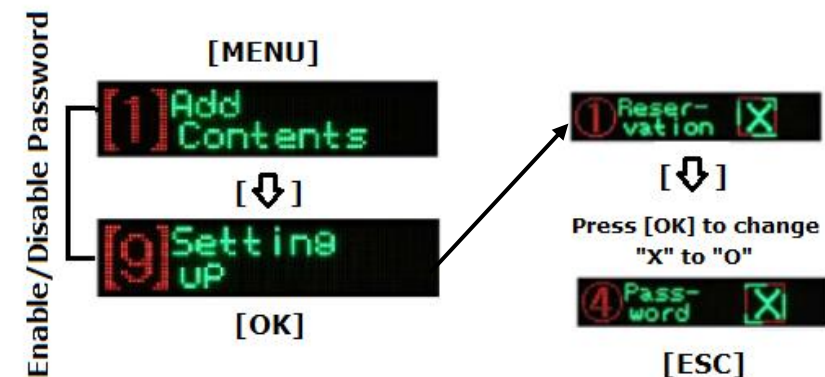 when you are done hit **[ESC]** to go back. Hit **[MENU]** to return to content.

14) How to Set Password

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to **(7) Password** and hit **[OK]**
- Input a 4 digit password and then confirm it by entering it again
- When you are done choosing your password, do not hit the [OK] button, hit**[ESC]** to go back. Hit **[Menu]** to return to content.

15) How to Turn Password On or Off

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to **(9) Setting Up** and hit **[OK]**
- You will see **(1) Reservation**, hit the down arrow button to **(4) Password**
- You will now see **(4) Password X**, with the blinking box around the "X"
- The X means that the password is off, to change it and turn it on, hit the **[OK]** button.
- The "X" will now turn to an "O" which means the password is on.
- When you are finished do not press [OK], hit the **[ESC]** button to go back and the **[MENU]** button to return to your contents.

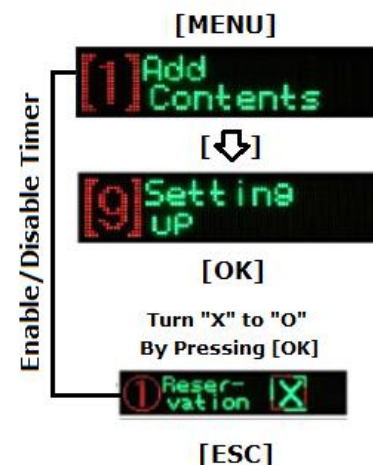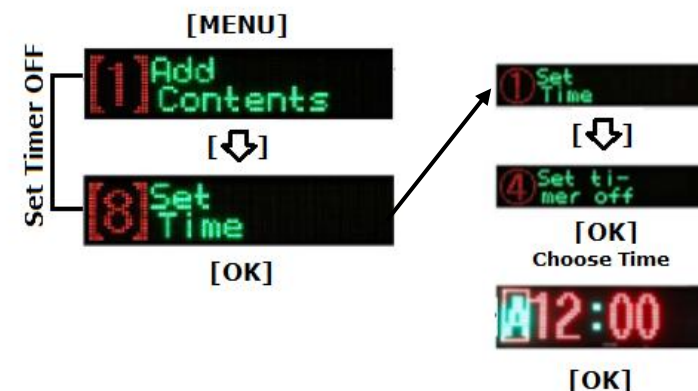## 16) How to Set the Sign to Turn On Automatically

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button
  to **(8) Set Time** and hit **[OK]**
- You will now see **(1) Set Time** hit the down arrow button until
  you see **(3) Set Timer On** and press **[OK]** The blinking box should
  be around the letter "A" for am. To change to pm, hit the down button.
- Next hit the right arrow button to the hours and the blinking box should
  be around the 12. To change the hours, hit the up or down arrow button.
  Then hit the right arrow button again to change the minutes and the
  blinking box should be around the 00. Hit the up or down arrow buttons
  to change the minutes.
- When you are done press **[OK]**

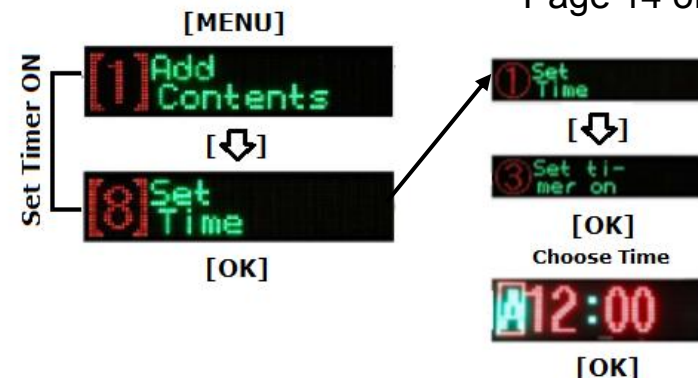## 17) How to Set the Sign to Turn Off Automatically

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to
  (8) Set Time and hit **[OK]**
- You will now see **(1) Set Time** hit the down arrow button until you see
  (4) Set Timer Off and press **[OK]** The blinking box should be around the
  letter "A" for am. To change to pm, hit the down button.
- Next hit the right arrow button to the hours and the blinking box should be
  around the 12. To change the hours, hit the up or down arrow button. Then
  hit the right arrow button again to change the minutes and the blinking box
  should be around the 00. Hit the up or down arrow buttons to change the
  minutes.
- When you are done press **[OK]**

18) How to Enable/Disable the Timer Function

- Hit the **[MENU]** button on the top of the remote
- You will see **(1) Add Contents**, hit the down arrow button to
  (9) Setting Up and hit **[OK]**
- You will now see **(1) Reservation** with an "X" or an "O" next to it
- "X" Means OFF and "O" Means ON. To change it, hit the **[OK]** button.
- When you are finished, hit the **[ESC]** button and the **[MENU]** button
  to return to the contents.

[MENU]

Set Timer ON

[1] Add Contents

[↓]

[8] Set Time

[OK]

① Set Time

[↓]

③ Set timer on

[OK]

Choose Time

A 12:00

[OK]

[MENU]

Set Timer OFF

[1] Add Contents

[↓]

[8] Set Time

[OK]

① Set Time

[↓]

④ Set timer off

[OK]

Choose Time

A 12:00

[OK]

[MENU]

Enable/Disable Timer

[1] Add Contents

[↓]

[9] Setting Up

[OK]

Turn "X" to "O"
By Pressing [OK]

① Reservation X

[ESC]

Trouble Shooting Guide

Note: Power must be unplugged before performing any trouble shooting or checking parts and as a precaution wear gloves when handling any parts. Unscrew the back aluminum cover and slide open for troubleshooting.

How to open the aluminum back cover?

Slide to Open

1) Unscrew the center screw.
2) Slide either side of the back cover to one side.
3) You may need to remove the back cover completely to see all the components.

When the LED Sign Does Not Power On

Check if the power cable is plugged into the outlet and there is power going to the outlet.

Unplug the LED Sign from the electrical outlet and leave it unplugged for at least 10 seconds and then plug the sign back into the outlet.

Make sure you didn't set an automatic timer for the sign. The automatic timer will seem like the sign will not turn on.

When the Remote Control is Not Working

1) Make sure the sensor on the sign is facing you while you are programming.
2) Replace the batteries in the Remote Control. Weak batteries will weaken the signal from the remote to the sensor.
3) Sun light may interfere with the infrared signal, shade the sensor to reduce interference.

Check the internal power supply to see if the green indicator is on.

Check the power wire plugs on the driver boards and main controller to see if they are fully seated and securely plugged in.

Check the ribbon cables coming off the main controller and the buffer boards to see if they are fully secured

If Part of the Sign is not Displaying Properly

1) Slide open the back of the sign
2) On every module there is a Driver board. The driver boards are the same shape as a dollar bill. Press the buffer boards in firmly to make sure they are fully secured.
3) Check all ribbon cables connections in the back of the sign to make sure they are all secure. Press all ribbon cables in firmly.
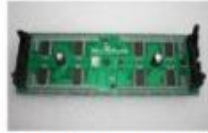
If your Sign is Displaying in Another Language

If your messages look like they are displaying in another language they are probably displaying vertical letters. In order to change the language in the sign, you would have to have gone into "Manager", enter a password and then change the language. If you did not follow those steps and your sign still looks like it is displaying in another language, change the orientation of the sign from Vertical to Horizontal and it should display correctly.
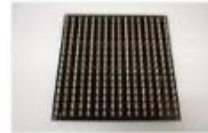
Glossary Terms

1. Main Controller
2. Driver Board
3. LED Module
4. Power Supply
5. Ribbon Cable
6. Temperature Sensor (Optional)
7. Buffer Board
8. Receiving Sensor

1. **Main Controller** – The red or blue printed circuit board which is the main controlling component.
2. **Driver Board** – The small rectangular printed circuit board that is embedded on the back of each LED Module. The ribbon cables are plugged into this unit and go from one unit to the next.
3. **LED Module** – The large square tile printed circuit board that has all the LED lamps embedded on it.
4. **Power Supply** – The silver box that the 110v power cable is attached to. This unit supplies all power to the components in the sign.
5. **Ribbon Cable** – The flat cables that send data from the main controller to the buffer boards, to the driver boards.
6. **Temperature Sensor** – (Optional)
7. **Buffer Board** – The small blue printed circuit board that is a midway point that transitions the ribbon cable flow from the main controller to the first driver board.
8. **Receiving Sensor** – The sensor on the front of the sign that detects the infrared signal from the remote.