

Railcar Passenger Information Display

Text Editor

<SE-Zeta for Farsi - User Manual>

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22 February 2008

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0. System Components

1) Hardware Components

Passenger information system (PIS) contains the following two components:

a. LED Display Module (PIB): Installed to the interior and exterior of the railcar and consists of a series of LED modules. Provides information and messages to the passengers.

- IDD: In-car display module.
- FDD: Front line display module.
- SDD: Side line display module.
- LDD: Line display module (X)
- TND: Train number display module (X)

b. Passenger Information Controller (PIC): Installed to the control cars at both ends and provides PIB display information. Utilizes distance data and station information to control the PIB.

c. Abbreviations

- PIS: Passenger Information System
- PIB: Passenger Information Board
 - IDD : Internal Display Device (○)
 - FDD : Front Display Device (○)
 - SDD : Side Display Device (○)
 - LDD : Line railway-position Display Device (X)
 - TND " Train Number Display device. (X)
- PIC: Passenger Information Controller

2) Software Components

a. Sentence Editor (SE-Zeta):

Used to edit the text string you wish to display on the display modules (PIB).

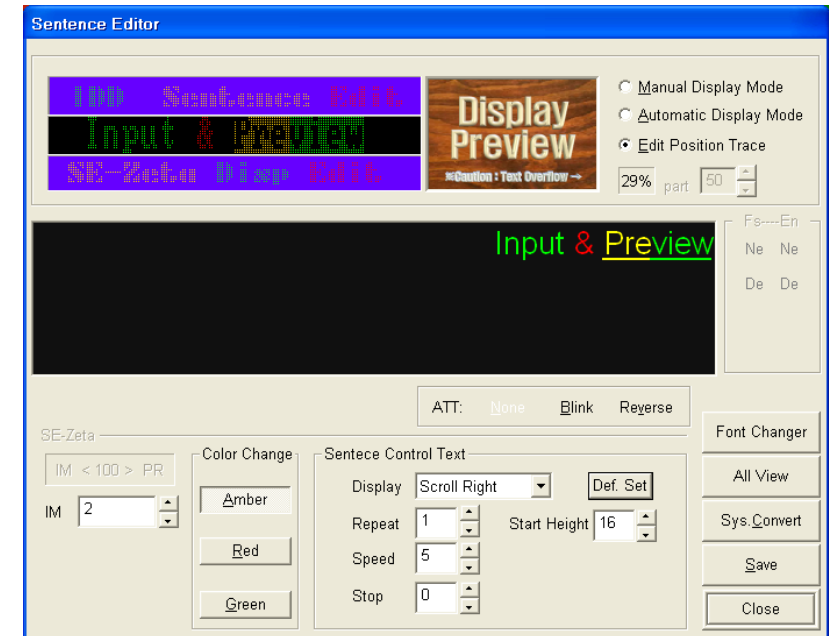
Software used for LED display modules (PIB). Supports text string and graphic image editing, offers text string sources, and includes fonts for standard text strings.

b. Schedule Pattern Editor (SPE-Alpha):

Used to edit the controller (PIC) schedule.

Software used for the controllers (PIC). Supports individual station info editing and enables the controllers to communicate with the LED display modules (PIB) based on the edited schedule pattern.

I. IDD Text Edit



1) Text Input

Click on the middle of the screen using the mouse to activate the caret (character input cursor) and then start directly entering the desired text. You can copy and paste text from a different source, but this may not always function normally. For example, the text may display all in black. In this case, the text may not appear on the editing screen but will show up in amber, the standard color, in the preview mode or on the display units. If the text does not appear on the editing screen, designate the block and then click on the Amber button to display the text in color.

You must, however, be cautious of text overflow. The percentage value located on the upper right corner of the screen indicates how much text has been entered. Avoid exceeding 100%. Exceeding 100% may result in the latter portion of the text string not getting displayed.

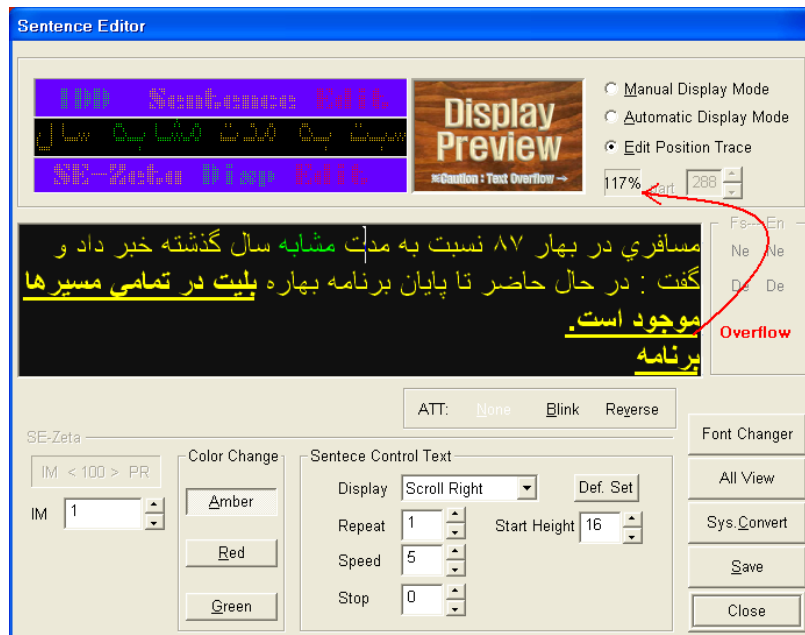
1. IDD Text Editor is a tool used for entering Farsi text that reads from right to left. In the case of alphabet text strings that's read from left to right, the preview feature does not function normally. For English, the editor supports short text strings and abbreviations only and is therefore unsuitable for English dominant applications. Farsi entries are displayed from right to left. Alphabet segments entered in the middle

of a Farsi string gets stacked, with previous entries getting pushed to the left and latter entries appearing from the right. Numbers following an alphabet character are displayed in English format, whereas numbers following a Farsi character are displayed in Farsi format.

1.1) Editing Features: Copy, Paste, and Cut are available as standard features.

- Copy: Copies highlighted text (Ctrl+C).
- Cut: Cuts out highlighted text (Ctrl+X).
- Paste: Pastes cut or copied text (Ctrl+V).

1.2) Character Count Limit: The percentage (%) value displayed directly beneath the mode options indicate the available buffer size. Entering text in excess of 100% results in a cutoff.



1.3) IM/PR Selection: IM and PR text strings are separated at text string no.100.

- IM (**I**nformation) [1 through 100]: Station data and other passenger-targeted information.
- PR (**P**ublic **R**elations) [101 through 160]: Used for promotional information text.
- This separation boundary is semantic in nature and involves no functional differences. However, text size in terms of protocol, including the attribute codes, is 300

bytes for IM and 500 bytes for PR.

- Spin Scroll (⏮️) enables you to scroll through text strings (previous and next) in single string increments (Page Up/Page Down).

1.5) Color Change: There are three colors available.

- Drag and highlight the desired text and then select from Amber (Alt+Y), Red (Alt+R), and Green (Alt+G).

1.6) Sentence Control Text

This code is used to designate how text within the concerned text string number gets displayed. The code controls individual text components within a string but not the entire text string itself. Different configurations can be assigned to individual text string numbers. There are six configurable settings, as shown below:

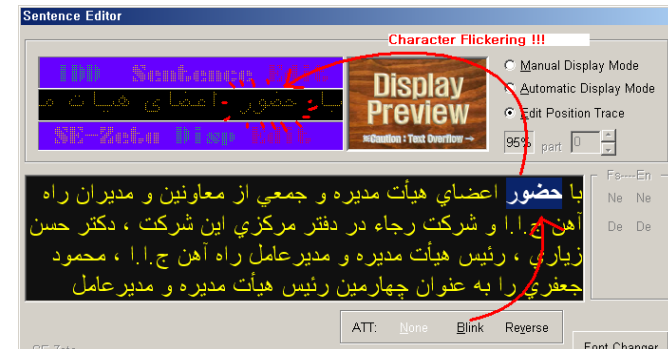
Sentence Control Text			
Display	Normal	Text is displayed in single screen format without scrolling for a fixed amount of time. If this display time is set to zero, the first screen will be displayed continuously without switching over to the next. (sequential screen switchover)	Normal display. * Start Height is configurable.
	Scroll Right	Scrolls right in a single line.	Scrolls right. * Start Height is configurable.
	Scroll Up	Deletes the entire screen and scrolls the current text string up.	Scrolls up. * Ignores Start Height.
	Scroll Left	Scrolls from right to left in a single line. This mode is used for English text and cannot be used for Farsi text.	Scrolls left.
DefSet (Button)	Refers to default set value. Clicking on this button will revert Repeat, Speed, Stop, and Start Height values for the current display mode to their default settings. The changes will apply only to the screen number currently being edited.		
Repeat	Refers to how many times you wish to repeat the current text string. Zero means infinite repetition until a countermanding text command is entered.		Default: 1
Speed	Refers to the speed delay, which is essentially the scroll speed. Greater the value, slower the scroll rate.		Default: 5
Stop	Refers to the stop time, which is how long a single screen is displayed.		Default: 10
Start Height	Refers to the display start height. The reference line for the bottom of the characters to be displayed on the display modules. For example, if the module's height is 16 under scroll left mode, set to 16=Upper Scroll, 24=Central Scroll, and 32=Lower Scroll for two lines and set to 16 for a single line.		Default: Module Height (lower scroll)

1.7) Character Attributes (ATT: Attribute): These settings change character attributes. First block designate the characters whose attributes you wish to change and then click on the ATT button. The following attributes are available:

* None: Removes all character attributes (all attributes are removed from the editor screen as well.)

* Blink: Adds blinking effect on the selected characters (configured characters are displayed in bold font on the editor screen).

* Reverse: Adds reverse effect on the selected characters (configured characters are displayed with an underline on the editor screen).



<Character Attribute 1 - Blink>



<Character Attribute 2 - Reverse>

1.8) Function Buttons

- Close: Terminates SE-Zeta IDD Editor.

- Save: Stores the entire text string currently being edited. This has no relation to the text that is to be sent to Preview on the upper half or the PIC (changed text) and saves the text string entered into the input window only. The text string is saved as "SE-Zeta_Fasi.rta".

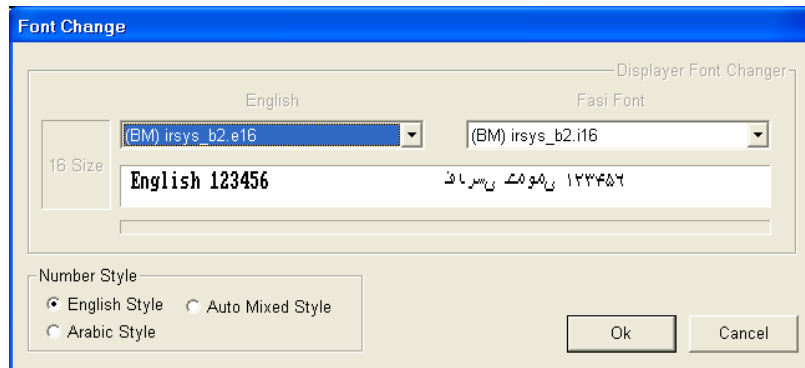
- Sys.Convert: Converts the text string currently being edited so that it can be sent to the PIC. The function converts and checks for conversion errors. Converted text string is saved as "Mun_wan.bin". This function operates independently of the Save function, which saves the text string being edited.

- AllView: Used to view all text strings in a document format, which can be viewed from a word processor (WordPad) or printed. Clicking on the button will prompt the

"Do you want all sentence?" message and the following three buttons:

- Yes: Displays all text strings from no.1 to no.160.
- No: Displays entered text strings only from no.1 and on.
- Cancel: Cancels the All View function.

- Font Changer: Used to change the font used (changing the font requires you to download the concerned font to the LED display modules - refer to the download information below).



There are two types of fonts supported: English and Farsi. Each type of font can be designated by the user. Clicking on the OK button and changing the font setting will update the "FontFasi.fmc" file.

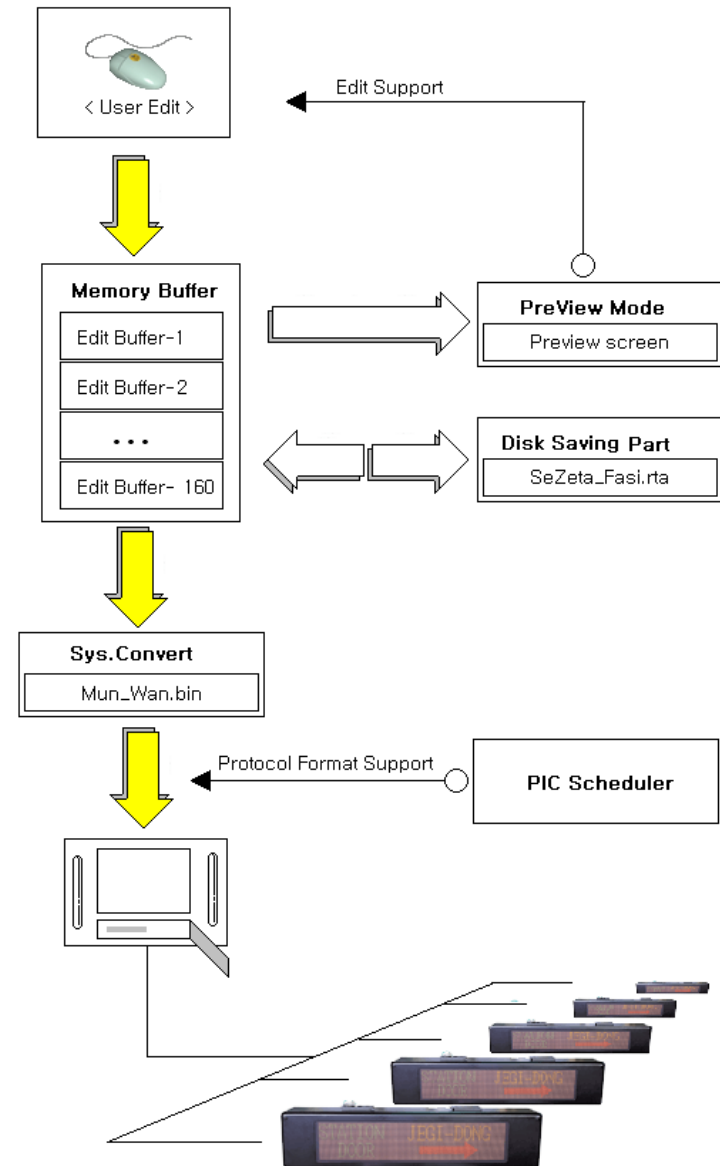
Note: After changing the fonts and clicking on the OK button, the changes will not apply on the display modules until you download the corresponding fonts to the modules.

- Number Style Option: Numeric display options for the Preview feature and number encoding data.

Arabic Style: ١٢٣٤٥٦٧٨٩ English Style: 0123456789

- Auto Mixed Style: Uses both Farsi and alphabetic numbers. The standard number format is Farsi, while numbers immediately proceeding an alphabet letter is automatically displayed in English number format.
- English Style: Converts all numbers into English format.
- Farsi Style: Uses Farsi number format only.

1.9) IDD Function Diagram



Text Editor: @[NextSta] 1234567890..

2. FDD/SDD Graphic Image Edit

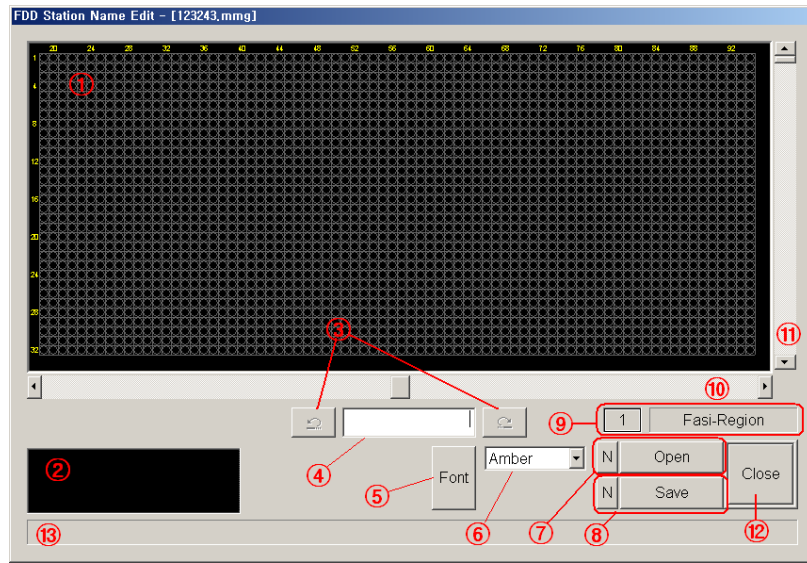


Fig.10 FDD Editor: 2 x 14 characters

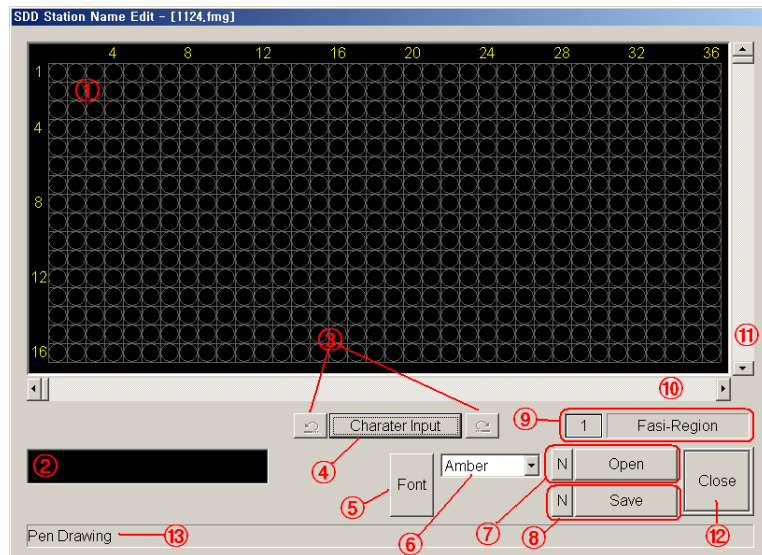
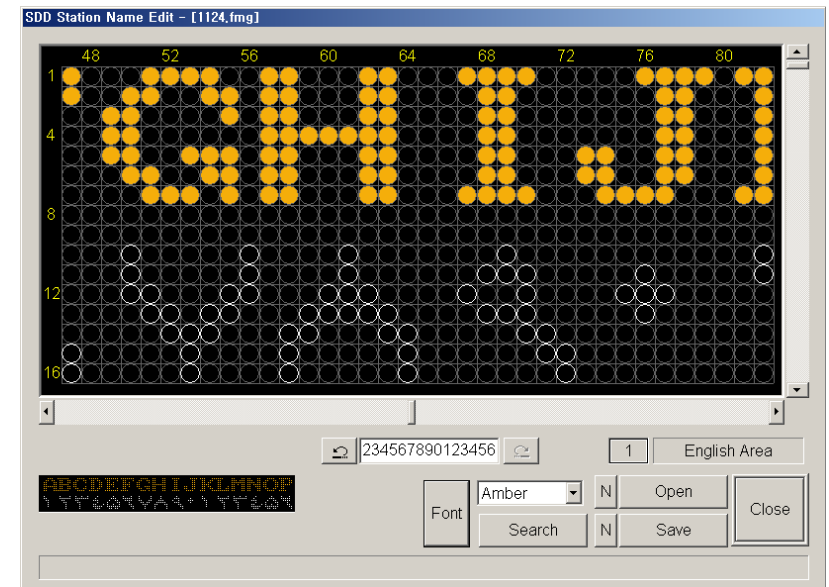


Fig.11 SDD Editor: 1 x 16 characters

This is the screen for editing FDD content. Utilizes graphic format to enable user design in the event of an overflow.

Overflow: FDD consists of two lines, each supporting 14 characters for a total of 28 characters. SDD, on the other hand, consists of a single line that supports 16 characters. SDD is configured to support two language sections (Farsi and English), which are alternated by the controller.

Note 1: Two lines of text can be displayed on a single line by using a font that's short in height (bahareh.i16), assigning the base position with the mouse, and then making two entries (refer to the editing function section below for more information on assigning the base position).



1) Editing

1.1) Edit Screen (1): From this screen, the user can enter text by directly activating/deactivating the dots. There are four modes to direct input. The name of the file being edited is shown on the title.

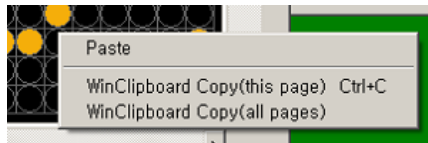
In general, the right mouse button is used to assign the selected edit color and the left mouse button is used to erase the assigned color.

Basic Edit Mode

- Dot Edit Mode (Right-Click and Left-Click): Enables dotting.
- Pen Edit Mode (Alt+Mouse): Enables line drawing and erasing.
- Box Edit Mode (Ctrl+Mouse): Enables box filling.

- Character Input Mode (Character Input Button): Enables character input using buttons. Also supports rotation and movement.
- Block Selection Edit Mode (Shift+Mouse): Enables block selection movement.
- Clipboard (Shift + Right-Click):

Copy (Ctrl+C) and paste (Ctrl+V) the station name being edited as an image. In the case of all station names, press Shift+the right mouse button and then the WinClipboard Copy option to copy all station names to the clipboard as shown below:



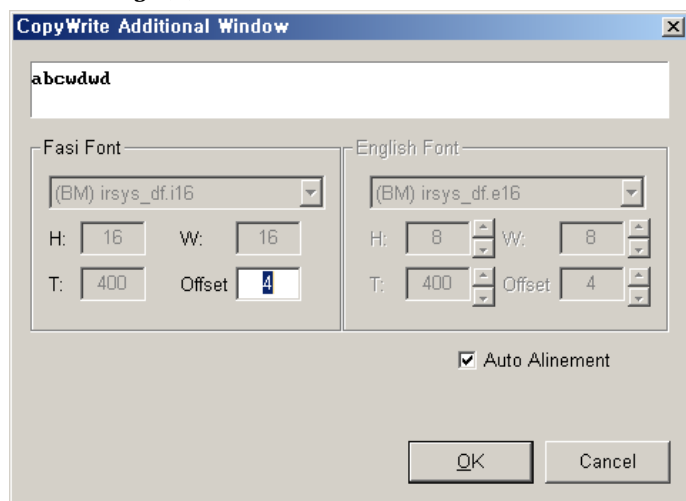
※ Up to 20 Undo/Redo steps are supported during text edit (※ Shortcut: Ctrl+Z/Ctrl+Y). Undo/Redo is not available while in progress.

1.2) Preview Screen (②): View the entire content being edited.

1.3) Redo/Undo Buttons (③): Supports up to 20 edit undo/redo steps.

1.4) Character Input (④): Used to enable character input.

1.5 Font Change (⑤)



- Displays the current Farsi and English fonts on the upper most section.
- The above image displays the default settings.
- Farsi Font: Used to designate the font for Farsi displays.
- English Font: Used to designate the font for English displays. Automatically selected based on the selected Farsi font.
- H: Used to designate the font height (Windows fonts only).
- W: Used to designate the font width (Windows fonts only).

- T: Used to designate the font height (Windows fonts only).
- Offset: The dot offset from the top most LED.
- Auto Alignment: Automatically adjusts the text size and zooms in and out depending on the number of entered characters. **In this case, (BM)irsys_df gets designated as the fixed font. In addition, it only appears with two lines or more like in FDD and does not use SDD. If you do not wish to use this feature, turn it off and select from the Farsi font section. The English font section for the graphic font selection is automatically configured with the same name as the Farsi font. When selecting the font, place focus only on the combo box that displays the font names and without opening the list beneath it. Then, using the up and down keys, scroll through the fonts to preview them. Font selection is applied to both FDD and SDD. Click on the OK button to confirm the selection.**

Examples of Auto Alignment:

- Auto Alignment Examples: Text input is based on the center of the display module.



(7 characters or less - vertical and horizontal zoom-in)



(14 characters or less - horizontal zoom-in only)



(14 characters or more - uses two lines)



(Entering a space between the letter K and the letter L)



(Entering a space between the letter H and the Letter I)

1.6) Edit Color Change (Ⓢ): Amber, Red, and Green are available. Configure from the text input window before making the entry or make the entry and then select all (ctrl+a) to select the desired color.

1.7) Open (Ⓡ): Opens and loads saved data (N: used to create a new entry)

1.8) Save (Ⓢ): Saves edited data (N: saves as a new file)

1.9) Edit Zone Position (Ⓢ): Indicates the position of the zone currently being edited. Also works by pressing the number position and then entering the station code number. Displays one language for FDD and two languages for SDD.

1.10) Horizontal Scroll (Ⓢ): Scrolls to the left or right from the partial view of the current editing screen.

1.11) Vertical Scroll (Ⓢ): Scrolls the station code.

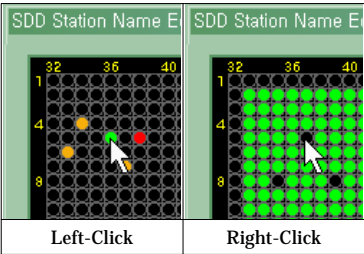
1.12) Close (Ⓢ): Terminates FDD/SDD Editor.

1.13) Status Bar (Ⓢ): Displays the status during editing.

2) Edit Mode

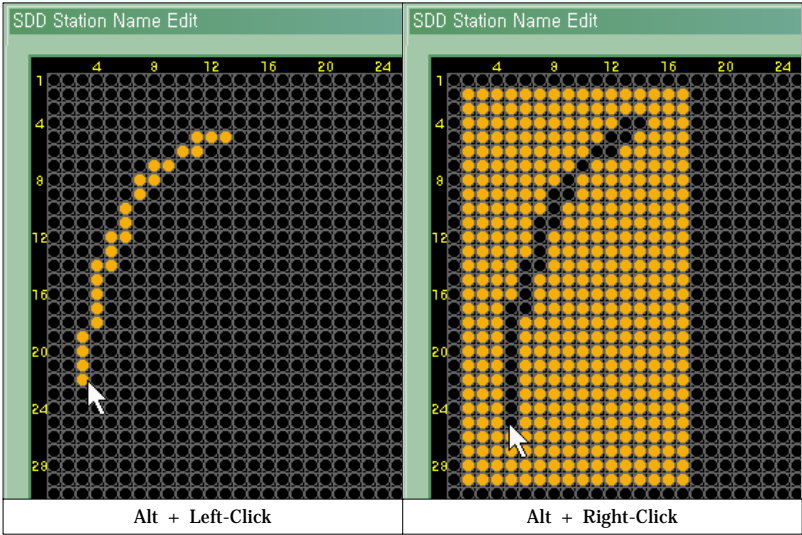
2.1) Dot Edit Mode (uses the mouse only)

Left-click to apply the selected edit color. Right-click to remove.



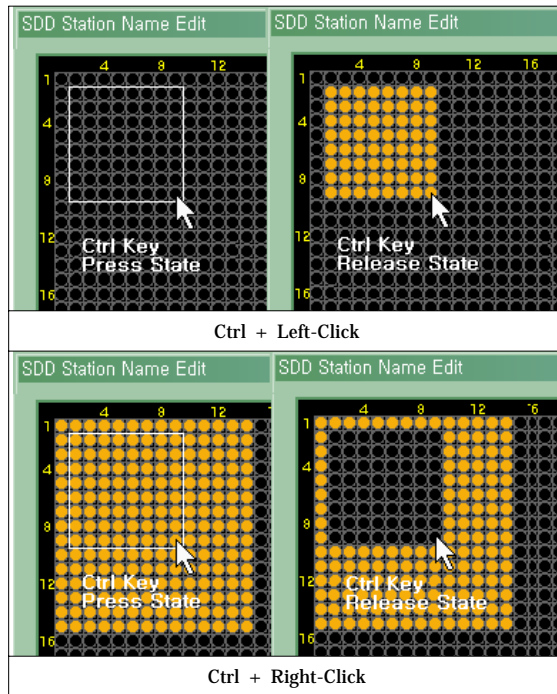
2.2) Pen Edit Mode (uses the alt key)

Alt+Left Mouse Button/Right Mouse Button: Draw line/erase line.

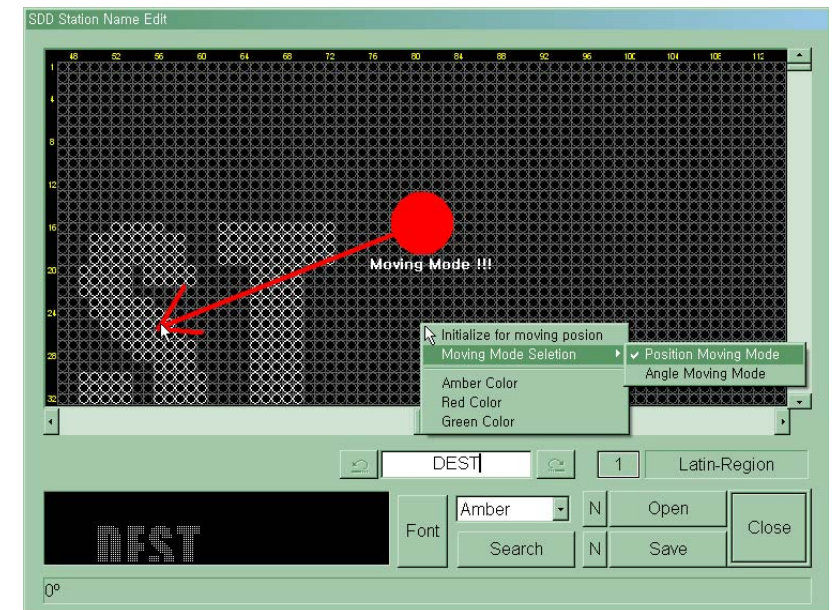


2.3) Box Edit Mode (uses the ctrl key)

Ctrl + Left Mouse Button/Right Mouse Button: Fill box/erase box.

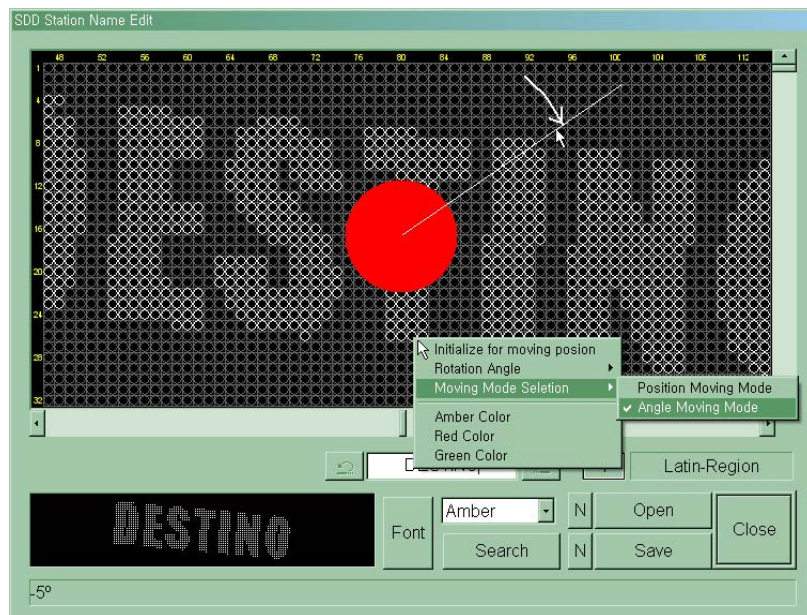


2.4) Character Input Mode (uses character input button)



- Click on the Character Input button to scroll from the center of the screen and access the character input mode.
- **There is a limited number of characters that can be entered.**
- Characters being entered will appear in white and the edit color will be assigned after pressing the Enter key.
- While entering characters, you can reposition the input position using the left mouse button.
- If entering characters again after entering characters, will insert the new characters on top of the old characters. This can therefore be used to create the character effect shown below.
- The Search feature will not appear if it's not supported.
- **Examples of character input using moving and overlap features:**

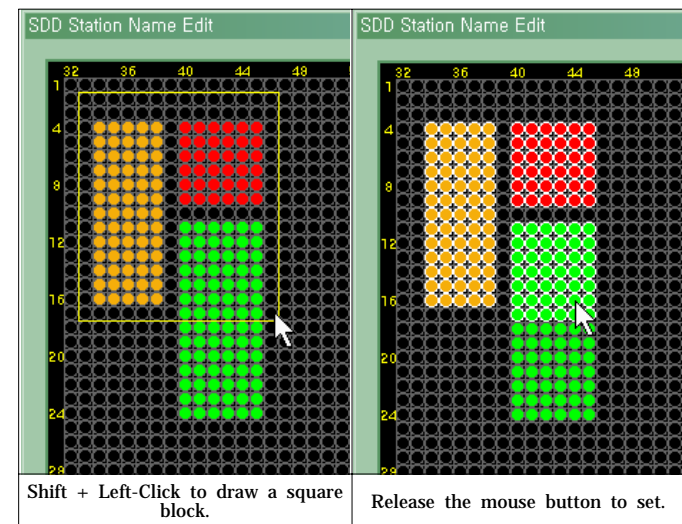




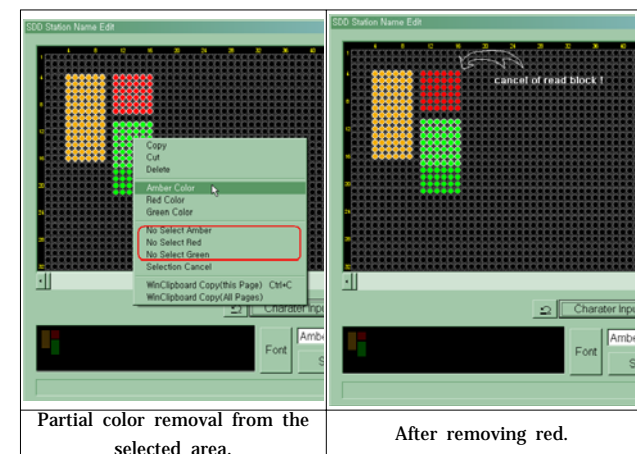
- Moving Mode is available only when character input is activated. During character input, use the right mouse button and use the Context Menu.
- Converting Moving Mode into Rotation Mode enables you to rotate the text using the mouse.
- Rotation angles (45°, 90°, etc.) can be selected from Rotation Angle.
- Moving Position Reset will reset both position moving and angle moving.
- Once the input is complete, moving mode will reset back to position moving mode.
- When moving and then rotating the text, the center of the screen becomes the pivot point and not the center of the text. In order to set the center of the text as the pivot point, make the input with rotation only and then select all (ctrl+a) and drag using your mouse to move.

2.5) Block Selection Edit Mode (uses shift key)

2.5.1 Block Designation



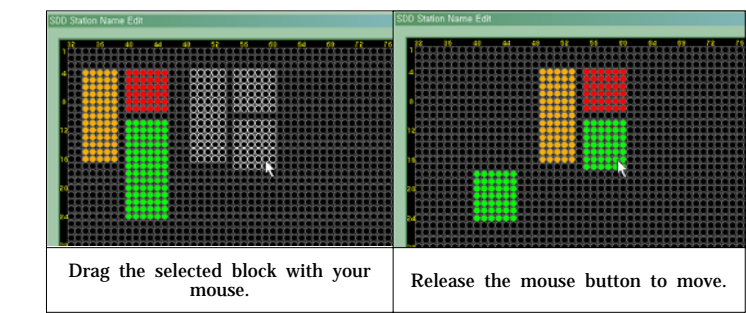
- Press the shift key again and drag the mouse to re-designate the block.
- To designate the entire screen as a block, press ctrl+a.
- From a designated block, you can use the right mouse button to remove partial colors within the block selected from Context Menu.



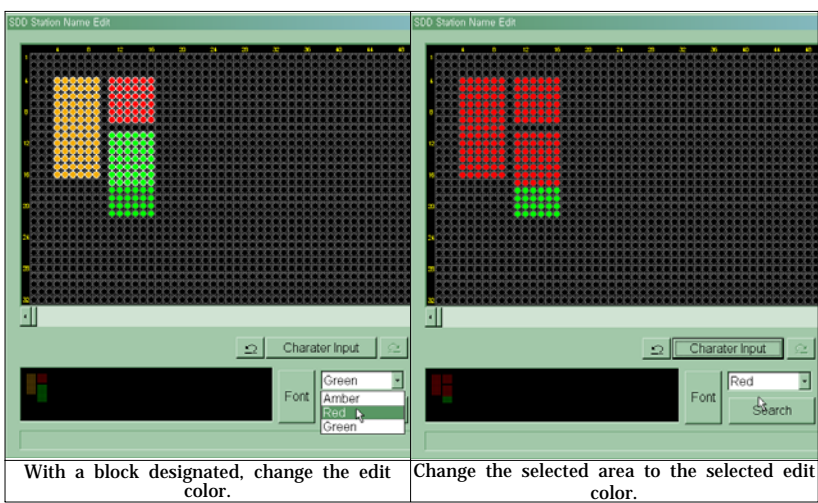
2.5.2 Block Move/Copy

- Drag the selected block with your mouse to move it. Press the ctrl key when

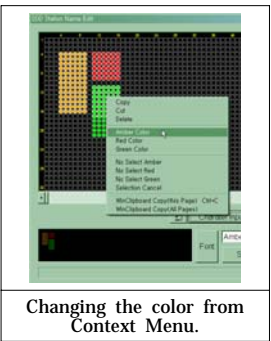
releasing the mouse to copy.



2.5.3 Switching Colors from a Selected Block



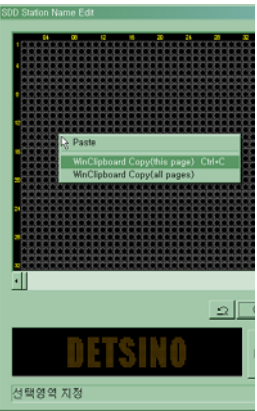
※ This can also be done through Context Menu (right-click).



2.5.4 Copy/Cut/Paste

Function	Shortcut	During Block Selection	Without Block Selection
Copy	Ctrl + C	Copies just the block to the clipboard.	Copies the entire screen to the clipboard.
Cut	Ctrl + X	Cuts just the block to the clipboard.	Cuts the entire screen to the clipboard.
Delete	Del	Deletes just the block (warning message).	Deletes the entire screen (warning message).

Shift + right-click to access Context Menu and then use Windows Clipboard to copy and paste.



<All Page>

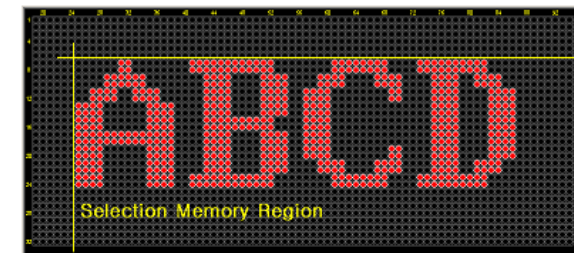
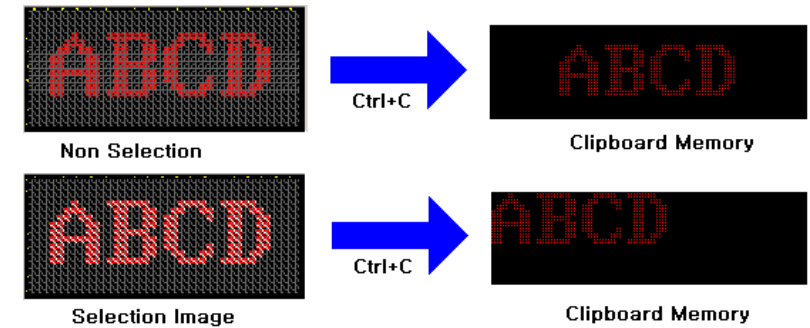
Using Paint will enable you to view the copy as an image and also to paste the image. However, pasting an image supports three colors only and will convert the colors to their nearest approximations.

In the case of All Page, pages (station codes) get counted from the upper left, starting from no.1 station code. With the figure on the right, 1Page of All Page includes two language sections.

2.5.5 Copy

Copies the graphic image currently stored in Windows Clipboard. There are two ways to copy:

- Copy without Selection: Press ctrl+c without making any selection on the screen to copy the entire screen, including the background.
- Copy with Selection: Copies only the selected area of the screen. The upper left corner of the selected box becomes the starting point.

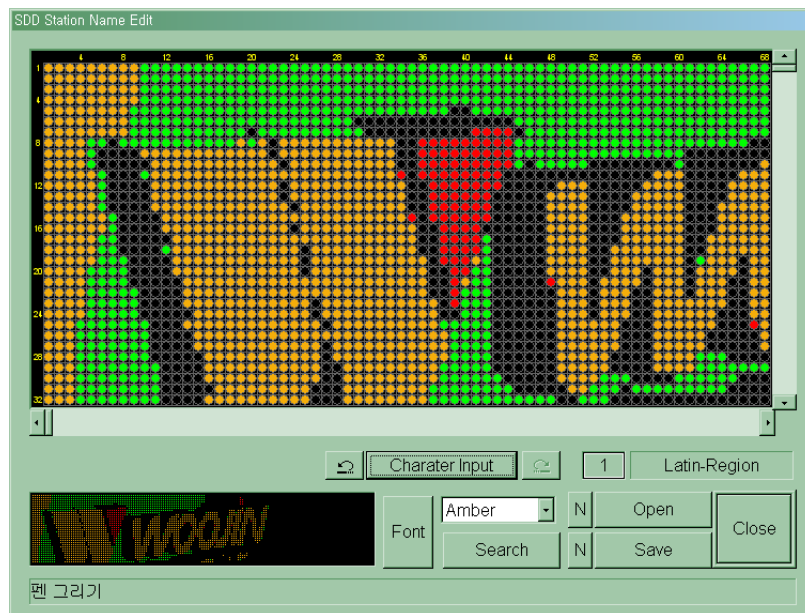


2.5.6 Paste

- Position-designated Paste: Press the shift key from the screen and then the right mouse button to access Context Menu. Click on the mouse to start pasting Clipboard content.
- Paste from Upper Left Corner: Ctrl+v to paste Clipboard content starting from the upper left corner.
- Images can also be pasted using Clipboard. However, this supports three colors only and will dither the image.



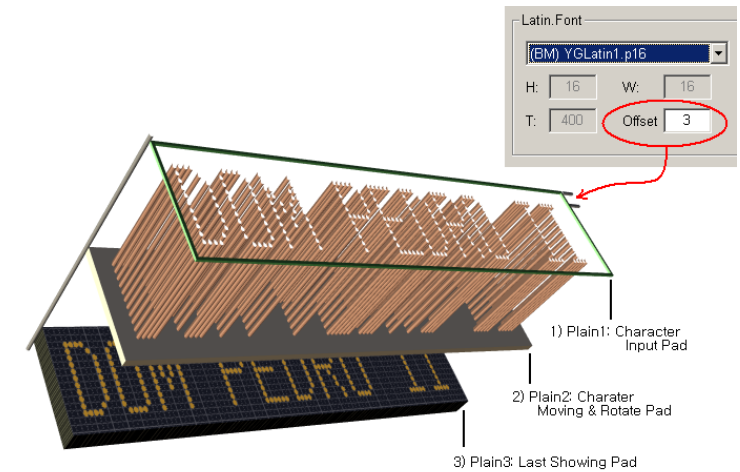
The following is the result of pasting the image on the left:



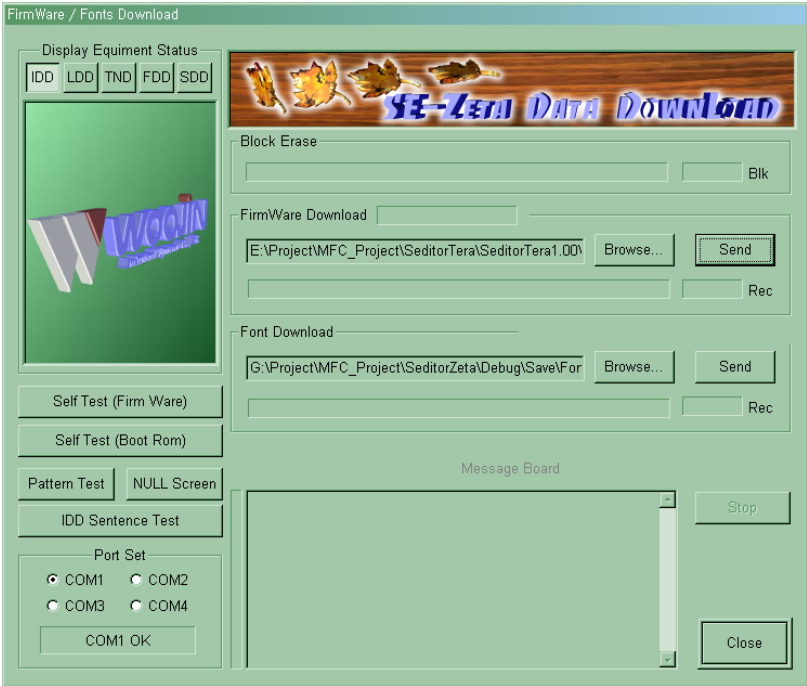
2.5.6 Text Input Projection

In text input projection, there are three planes involved.

- Plane 1: Determine the level and reference point of the text input and then positions the text to match the font. Here, offset can be used to adjust the black space of the text itself. Therefore, if the positioning is not right, the text might not appear at all. Adjust the offset to ensure text visibility.
- Plane 2: Moves or rotates the projected text.
- Plane 3: Displays the projected text on the screen.



3. Data Download



Downloads are made via the computer's RS-232 port and requires a separate 485 converter. The display modules include two types of software: Boot Rom that oversees data downloads, and firmware that takes care of module functions.

1) Component Functions

- Display Equipment Status [DES]: Selects the display module to test and download to and displays its status.
 - ① IDD: Passenger information display module.
 - ② LDD: Line information display module.
 - ③ TND: Train number display module.
 - ④ FDD: Front display module.
 - ⑤ SDD: Side display module.

=> Module status is shown as either OK or NG and is shown during testing on the message board.
- Self Test (Firmware): Initiates firmware self diagnosis. Displays the check status on the message board and the results on DES.

OK (Normal): Normal response.

NG (Abnormal, No Response): Response not received.

- Self Test (Boot Rom): Initiates self diagnosis of Boot Rom. Displays the check status on the message board and the results on DES.
- Pattern Test: Initiates a pattern test to enable visual test of LED status on all display modules.
- NULL Screen: Refers to zero display. Clears all messages from the screen. Regular commands are sequentially stacked and then applied once the task at hand is completed, but this particular command gets applied even while scrolling is in progress and cancels any and all stacked commands.
- Test Button: Sends a command to the display modules and activates the upper right corner.
 - ① IDD: Sends a text string - Directly enter the string or transmit by retrieval. To retrieve, type in a number in 001 format.
 - ② LDD: Enter the line pattern number.
 - ③ TND: Enter the train number.
 - ④ FDD: Enter the station code.
 - ⑤ SDD: Enter the station code.
- Port Set: Sets the port.

You need to designate which of the four ports to use.
- Block Erase: Appears during font or firmware download. Block erase is always included before a download.
- Firmware Download: Initiates firmware download of IDD. Do not download any file that's not supplied by the manufacturer. Doing so can result in a malfunction. Manufacturer-supplied file versions are displayed on the right side of the firmware download title.
- Font Download: Downloads fonts. Fonts have been downloaded on to the modules by default and, excluding special circumstances, there is no need to download the fonts again.

Firmware Download	
1) Select the type of the display module.	

2) Select the firmware file.			
3) Press the Send button.			
Font Download			
1) Select IDD.			
2) Select the font file.			
3) Press the Send button.			
Self Diagnosis	Display modules include two types of software: Boot Rom: Software that contains firmware and font download services. Firmware: Software that contains display services. Of these two, the response from Boot Rom is checked to determine the OK/NG status.		Boot Rom
	Firmware	Measures the time starting firmware activation to identify display modules whose response times are different and thereby discover evidences of a reset.	
	B o o t Rom	Converts into download software to check the response.	
Simple Transmissio n Command	Pattern Test, No Indication, Text String Transmission (IDD), Station Display (Line), Station Name Display (Front Line)		Firmware

2) Testing and Transmission Method Example

2.1) Connect a RS-485 converter to the computer's RS-232 port and then hook up one or multiple display module cables.

2.2) Select IDD from the list of display modules.

2.3) Press the Self Test (Firmware) button to check the response.

2.4) Press the Pattern Test button to check the pattern display status of the display modules.

2.5) Press the IDD Sentence Test button to send a test string.

The screenshot shows a software window with a green border. On the left, there is a dropdown menu set to 'Norm', a checkbox for 'Gothic', and three radio buttons labeled 'R', 'G' (which is selected), and 'A'. In the center, a text input field contains the string 'IDD Sentence testing'. On the right, there is a 'Send' button.

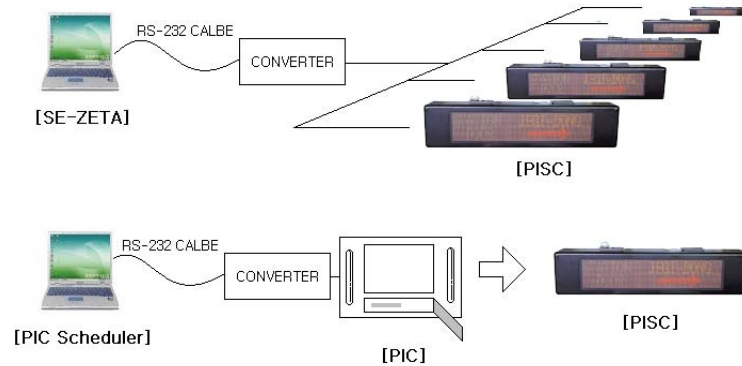
2.6) Send a previously edited text string as a test (indirect retrieval).

The screenshot shows a software window with a green border. On the left, there is a dropdown menu set to 'Norm', a checkbox for 'Gothic', and three radio buttons labeled 'R', 'G' (which is selected), and 'A'. In the center, a text input field contains the string '001'. On the right, there is a 'Send' button.

=> Verify that the entered string is being displayed normally.

4. Miscellaneous

1) System Composition Diagram



2) Function Descriptions

No.	Main Menu	Description
1	SEditor Zeta About	Displays SE-Zeta version.
2	IDD Text Edit	Used to edit IDD text string.
3	FDD Graphic Image	Used to edit FDD graphics. The user needs to directly edit and verify. Supports various graphic designs. Use the Search feature after storing the station name in PIC Scheduler.
4	SDD Graphic Image	Used to edit SDD graphics. The user needs to directly edit and verify. Supports various graphic designs. Use the Search feature after storing the station name in PIC Scheduler.
5	Firmware/Font Download	1. Supports testing of a composed IDD text string. 2. Supports display module test. 3. Downloads fonts and graphics to the display modules.
6	EXIT	Terminates SE-Zeta.

3) Save Folder Descriptions

Folder Composition	Fonts	Includes various fonts.
	Hexa	Directly download in raw format using a laptop or save Intel Hexa codes for verification.
	Intro	Initial display module logo file site.
	Save	Contains various save files of SEditorZeta. Backup this content to preserve all SE-Zeta content.
	Wave	Audio support folder for future expansions.

4) Recommended Specifications

- 3.1) Operating System: Windows XP
- 3.2) Memory: 256 Mbyte or higher
- 3.3) CPU: 2.5 GHz or higher
- 3.4) Hard Disk: 100 Mbyte or higher
- 3.5) RS-232 Serial Port: Internal or docking port recommended