

ASCII Protocol Board LAN / Serial

**Low Cost & Industrial Grade
Cabinets**

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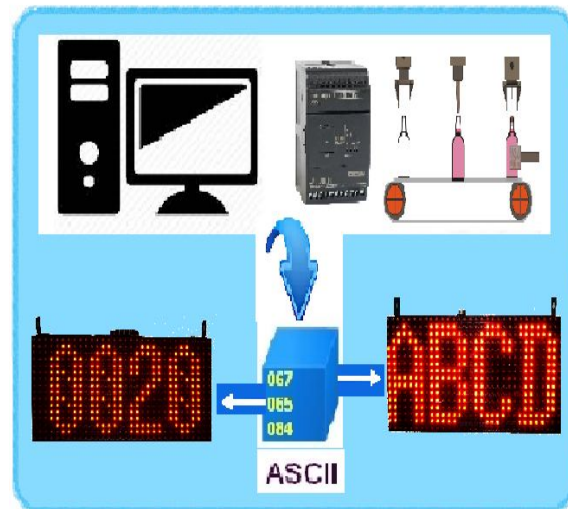
42, Mambalam High Road,
T Nagar, Chennai,600017
sales@factorydisplay.com

Description

LED ASCII protocol board allows PCs ,PLCs or other automation devices to send data to display to the LED board as ASCII data over LAN , WIFI or Serial (RS232/RS485) .

The ASCII protocol is simple and can control the Text, Font , Effect , Speed etc.Unit parameters can be programmed by the user. The user can set transmission parameters as device ID, effect , speed , stay time, data format and display parameters like alignment, Font, brightness etc. Programmed parameter set is stored in non-volatile memory and hardware protected.

There are also effects for displaying text that is larger than the LED Board.



Product Features

- Protocol - Simple ASCII with Start and End Character With CRC for error detection.
- Data can be sent over LAN via TCP/IP , RS-232 or RS-485
- Four Built in Fonts
- More than Ten Effects
- Speed and Stay time can be defined for messages
- IDLE time can be set which will allow the default message to be displayed after a predefined time.
- Text positioning can be done in fixed messages
- Brightness control available

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Notes and Options.

- All displays are in single colour.
- The default supply is always in RED colour.
- Other colours on request at extra cost.
- RED colour brightness is good for viewing both indoors and outdoors.
- For outdoor units – cost increases by 18% on base price.
- Titles and other fixed designs can be added to your specification.
- All units work off 230V AC mains (110V can be quoted for separately)
- Mounting provision
 - #1 – Top eye bolts – you can hang it from ceiling.
 - #2 – Side clamps – you can bolt it to your supports.

Sizes and Models

Model	Digit Height (mm)	No. Of Characters/ Digits per screen		Height (mm)	Width (mm)	Depth (mm)	Max Power (W)
		140mm high	70mm high				
ECON-IC-ASCII-11	One line of 140mm OR Two lines of 70mm	4	10	160	320	50	35
ECON-IC-ASCII-12		8	20	160	640	50	65
ECON-IC-ASCII-13		12	30	160	960	50	95
ECON-IC-ASCII-14		16	40	160	1280	50	125

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Technical Specifications	
VOLTAGE	230 VAC 1 PHASE MAIN POWER
OPERATING TEMP	5 TO 55°C
STORAGE TEMP	0 TO 65°C
RELATIVE HUMIDITY	UPTO 95% RH NON CONDENSING
DISPLAY	FULL MATRIX
LED COLOUR	RED
CHARACTERS TABLE	ASCII CHAR. (CODE 30H TO 5 FH)
PROTOCOL	ASCII PROTOCOL
INTERFACE BY	RS232/RS485/LAN/WiFi COMMUNICATION
DATA TRANSFER RATE	9600 BAUD (8,n,1)
DATA TYPE	CHARACTER, INTEGER AND FLOAT
ACCESSORIES	POWER CABLE 1 METER

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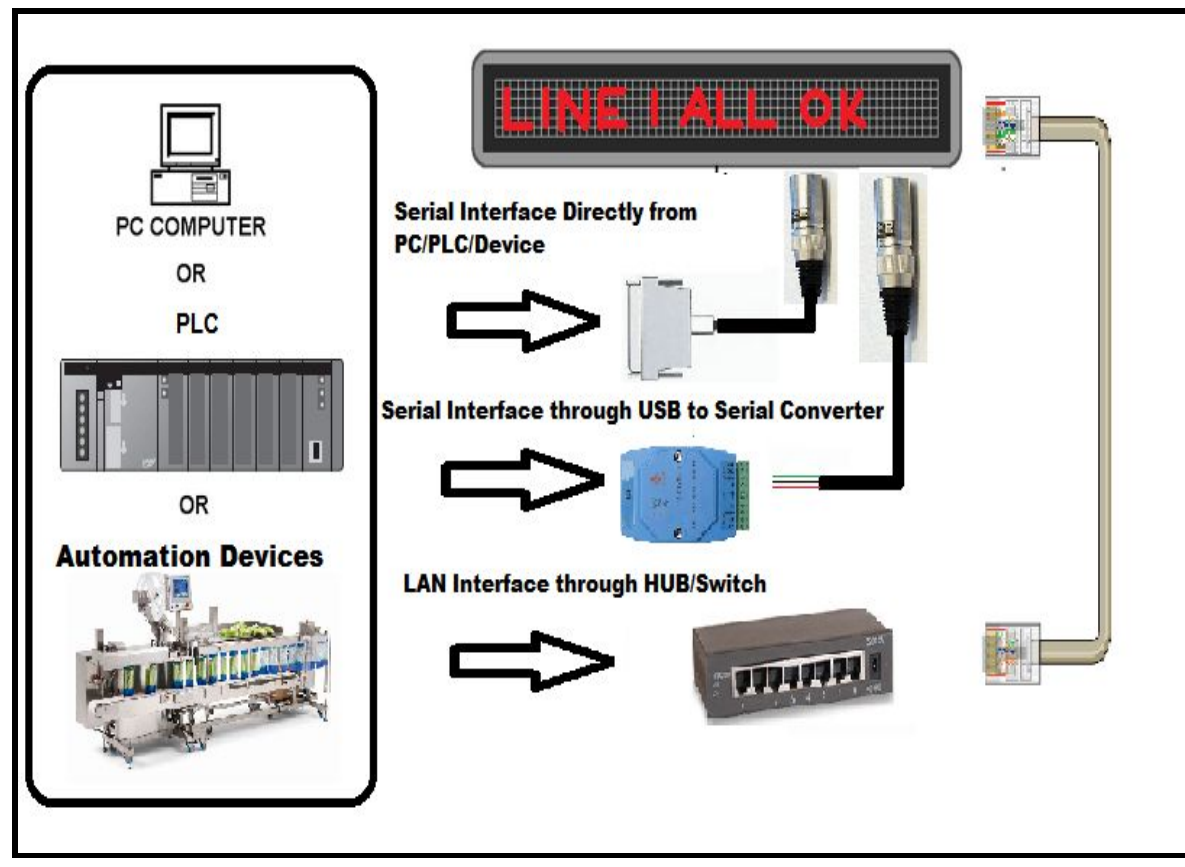
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Electrical Connections.

- 1) All modules have built-in communication ports. Connect PC/PLC or any other automation devices with Module through RS232/RS485/LAN or WiFi communication port.
- 2) In RS232 communication Connect the unit to PC/PLC or any other automation device through RS232 cable or connect the unit through USB to serial adapter like USB to RS232 adapter
- 3) In order to connect in RS485 communication use an appropriate RS232 to RS485 or USB to RS485 adapter on PC side. In PLC or any other devices have RS485 terminals. Connect the module to that RS485 terminals directly.
- 4) In LAN module to connect with the PC/PLC or with any other automation devices use RJ45 connector and connect this through the HUB.
- 5) Use 2 core twisted pair cable with shield for better performance or Communication Cable CAT5 or CAT6 with shield and Ground one End of shield

Connection Details



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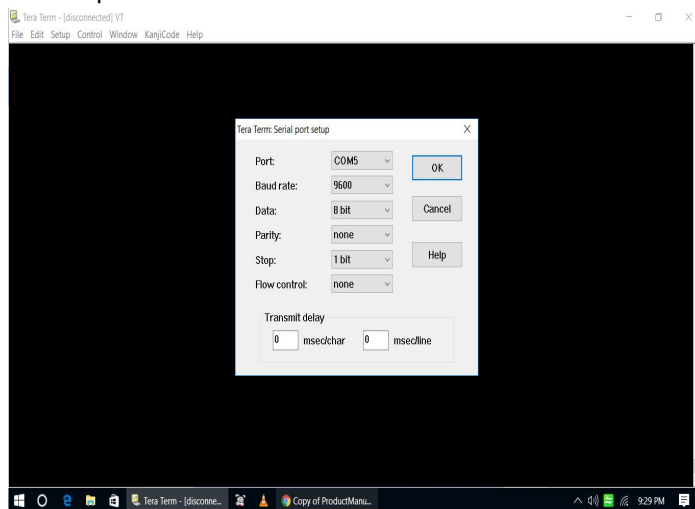
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ASCII Configuration Protocol.

Use the terminal programs like Hyperterminal, TeraTerm, RealTerm or Putty software to send the ASCII protocol setting to the board via RS232/RS485/LAN/WiFi communication.

In the terminal program set 9600,8,n,1 setting for RS232/RS485

- Set your communication port no
- Set Baud rate as 9600 Baud
- Set Data as 8 Bit
- Set Parity as none
- Set Stop bit as 1 Bit



In the terminal program set IP address, TCP port, service, protocol for LAN/WiFi

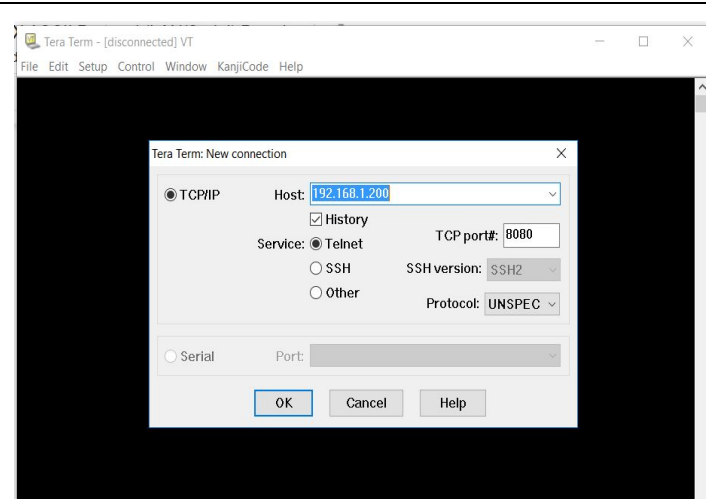
- Set your Host IP address
- Set TCP port as 8080
- Set Service as Telnet
- Set Protocol as unspec

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The RS232 / RS485/LAN should be connected to the board and a terminal program like Hyperterminal, TeraTerm, putty or RealTerm should be used. The Board uses 9600 8,n,1 Setting.

Packet Format

Start of Packet SOP => [
End Of Packet EOP =>]

[ID Command Data CRC]

ID (2 chars) is the ID of the board default is 01

Command (1 char) is the command character which defines the function.

Data (n chars) is the data associated with the command.

CRC (2 chars) is the CRC for the data packet. To ignore CRC provide XX.

Command	Description	Example
Set Device ID	This command sets the device ID when multiple devices are connected. Default device will be 01.	[ID ZD DD CRC] DD-01234567890123456789 Ex: [01ZD02XX] [01ZD10XX]
Set Brightness	This command is used to set the brightness of the led display. Where Brightness can be from	[ID ZH N CRC] Ex: To set minimum brightness

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	0-9.	[01ZH1XX]
Set TEXT	This command send text to led display with all parameters Font, Effect, Speed, Stay time, Alignment etc..	[ID T Font(1-9) Effect(A-Z) Speed(00-FF) Stay(00-FF) Align(0-F) tttttttttt CRC] Ex: [01T1A0F1F8Welcome To G-BoxXX]
Set TEXT and save.	This command send text to led display and it will be saved with all parameters Font, Effect, Speed, Stay time, Alignment etc	[ID U Font(1-9) Effect(A-Z) Speed(00-FF) Stay(00-FF) Align(0-F) tttttttttt CRC] Ex: [01U1A0F1F8Welcome To G-BoxXX]

Font	ASCII Value	Example Command
FONT_GBOX_5X7 (included)	1	[01T1A0F1F8Welcome To G-BoxXX]
FONT_GBOX_8	2	[01T2A0F1F8Welcome To G-BoxXX]
FONT_GBOX_16(included)	3	[01T3A0F1F8Welcome To G-BoxXX]
FONT_GBOX_16_WIDE	4	[01T4A0F1F8Welcome To G-BoxXX]
FONT_GBOX_24	5	[01T5A0F1F8Welcome To G-BoxXX]
FONT_GBOX_16_LARGE_NUM	6	[01T6A0F1F8Welcome To G-BoxXX]
FONT_GBOX_28	7	[01T7A0F1F8Welcome To G-BoxXX]
FONT_GBOX_32	8	[01T8A0F1F8Welcome To G-BoxXX]
FONT_GBOX_32N	9	[01T9A0F1F8Welcome To G-BoxXX]

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Effect	ASCII Value	Example Command
SCROLL_ANIM_STAY	A	[01T3A0F1F8WelcomeXX]
SCROLL_ANIM_SCROLL_LEFT	B	[01T3B0F1F8WelcomeXX]
SCROLL_ANIM_SCROLL_CONT_LEFT	C	[01T3C0F1F8WelcomeXX]
SCROLL_ANIM_SCROLL_BLINK_LEFT	D	[01T3D0F1F8WelcomeXX]
SCROLL_ANIM_BLINK	E	[01T3E0F1F8WelcomeXX]
SCROLL_ANIM_BOT2TOP	F	[01T3F0F1F8WelcomeXX]
SCROLL_ANIM_CONT_BOT2TOP	G	[01T3G0F1F8WelcomeXX]
SCROLL_ANIM_BLINK_BOT2TOP	H	[01T3H0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_TOP2BOT	I	[01T3I0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_TOP2BOT	J	[01T3J0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BOT2TOP	K	[01T3K0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_BOT2TOP	L	[01T3L0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_L2R	M	[01T3M0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_L2R	N	[01T3N0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_R2L	O	[01T3O0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_R2L	P	[01T3P0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_TOP2BOT_FULL	Q	[01T3Q0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_TOP2BOT_FULL	R	[01T3R0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BOT2TOP_FULL	S	[01T3S0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_BOT2TOP_FULL	T	[01T3T0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_L2R_FULL	U	[01T3U0F1F8WelcomeXX]

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SCROLL_ANIM_WIPE_BLINK_L2R_FULL	V	[01T3V0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_R2L_FULL	W	[01T3W0F1F8WelcomeXX]
SCROLL_ANIM_WIPE_BLINK_R2L_FULL	X	[01T3X0F1F8WelcomeXX]
SCROLL_FIXED_MESSAGE	Y	[01T3Y0F1F8WelcomeXX]
SCROLL_FIXED_BLINK	Z	[01T3Z0F1F8WelcomeXX]

SCROLL_FIXED_MESSAGE and SCROLL_FIXED_BLINK are special since they display text messages directly without textwrapping etc. Special Characters in the string can be used to position text.

Char = 0x0A => Will move the text cursor to the next line ex "Line1""x0A""Line2"
 Char = 0x0D => Will move the text cursor to the X start.(Will make X=0).
 Char = 0x0E => Will move the text cursor to the Y start.(Will make Y=0).

Char = 0x0C => Will Switch the font between 16 and 5x7

Char = 0x0B => Will move the text cursor to the starting of the current module.

Char = 0x01 - 0x07 => Will move the text cursor by 1 - 7 pixels So if you want two pixel gap between Two words then you can specify "Test1""0x02""Text2".

Char = 0x08 't' => Will move the text cursor to the starting of the next module.

Speed	00-FF	Ex:For Min speed [01T1A001F8Welcome To G-BoxXX] Ex:For Max speed [01T1AFF1F8Welcome To G-BoxXX]
Stay Time	00-FF	Ex:For Min stay time [01T1A00008Welcome To G-BoxXX] Ex:For Max stay time [01T1AFFFF8Welcome To G-BoxXX]

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Alignment	ASCII Value	Example Command
No Alignment (Default)	0	[01T1A0F0F0Welcome To G-BoxXX
Top Left	1	[01T1A0F0F1Welcome To G-BoxXX
Center Left	2	[01T1A0F0F2Welcome To G-BoxXX
Bottom Left	3	[01T1A0F0F3Welcome To G-BoxXX
Top Center	8	[01T1A0F0F8Welcome To G-BoxXX
Center Center	A	[01T1A0F0FAWelcome To G-BoxXX
Bottom Center	B	[01T1A0F0FBWelcome To G-BoxXX
Top Right	C	[01T1A0F0FCWelcome To G-BoxXX
Center Right	E	[01T1A0F0FEWelcome To G-BoxXX
Bottom Right	F	[01T1A0F0FFWelcome To G-BoxXX

CRC Calculation

The CRC is the ASCII Encoded HEX

Ex:

CRC is calculated by XORing all the characters from ID to end of data. STX character [is not included in the CRC.

[01E2000.0169]

```
byte i, CalcCRC=0;
for(i=1;i<PacketLen-2;i++)
{
  CalcCRC = CalcCRC ^ InputText[i];
}
```

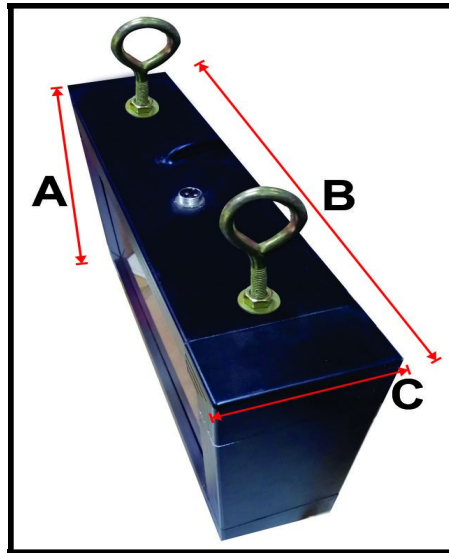
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Dimensions



All Units in mm

Model No	A	B	C
ECON-IC-ASCII-11	250	410	93
ECON-IC-ASCII-12	250	730	93
ECON-IC-ASCII-13	250	1050	93
ECON-IC-ASCII-14	250	1370	93

Heavy Duty Cabinet

- ❑ The Heavy Duty Cabinets make the LED board more durable and robust.
- ❑ The cabinets are made from extruded aluminium profiles and moulded corners for better appearance.
- ❑ The front filter used is Perspex / LEXAN ® sheets for UV and robust.
- ❑ The hanging hooks are also heavy and suited for mounting from your support structure.

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