

Pro-Lite, Inc.
Basic Protocol for Pro-Lite ASCII-Series Version 5.24

Introduction

In order to make these capabilities as simple as possible and more user friendly, a new and easy protocol with straight ASCII has been developed. This manual is designed to provide full protocol information for users who want to write their own user interface program to communicate with Pro-Lite ASCII base electronic moving message signs.

Structure of Protocol :

<IDXX>...TEXT/COMMAND.. [cr][lf]

Where :

<IDXX>	Packet header also served as destination identifier
< & >	are ASCII code 3C, 3E
ID	are character "I" & "D" (must be in Upper case)
XX	are the Hex numbers 00 to FF in ASCII format i.e.
00	= Global Call
01	= display unit 1
0A	= display unit 10
10	= display unit 16
FF	= display unit 255

...TEXT/COMMAND...

Packet body either Display Data or Command
(refer to Page message & Command for details.)

[cr][lf] Packet end with Character Return and Line Feed

[cr] = ASCII code 0D

[lf] = ASCII code 0A

Remarks: Each single packet only carries one page of Display Data or single Command, the rest Of the entries will be ignored.

Each packet(s) must consist of a unique ID number, except for the SET CLOCK command (see Command section).

An **<IDxx>** will echo back from the display as acknowledgement of a successful transmission.

Note: there will be no echo back for the SET CLOCK command or global call.

Display Data:

A) Page message :

There are 26 pages available in the display sign, the length of each page is dynamic which includes text, graphics and European characters, the basic format is as follows:

<IDXX><Px>...MSG...[cr][lf]

<Px> denotes which page this message belongs to :

<, P, > are ASCII character "<" "P" & ">" respectively

x is the page number in ASCII character, i.e.

A = Page A

B = Page B

⋮

⋮

Y = Page Y

Z = Page Z

Remark: if no **<Px>** is specified, page A is assumed as default.

...MSG..... Contents of message data in this page includes color informations, character size informations & display functions etc.

Text message:

ASCII characters:

Accepts free format text, i.e. any character and symbols
(96 ASCII printable characters 20H - 7FH).

European characters:

72 European characters is provided for multi-nation language applications, they are addressed as follow:

<UA>

<UB>

⋮

* For the European assignment table, please refer to APPENDIX A

Graphic Blocks:

26 User alterable graphic blocks are provided to enrich the visual effect, they are addressed as follows:

<BA> Graphic A

<BB> Graphic B

⋮

<BY> Graphic Y

<BZ> Graphic Z

Color information:

26 color combination selections are allowed.

To define the color of the following character(s) a *color attribute indicator* must be placed before it, such as :

<CA> Low Red <CB> Mid Red
<CC> High Red

:The default character color is Rainbow <CP>.Once the attribute indicator is placed, the following character(s) will be changed to the corresponding color until another attribute is encountered.

* For details please refer to color table in APPENDIX B

Character size:

8 combinations of two character sizes and their associated effects are available for selection.

To define the size of the following character(s), a *size attribute indicator* must be placed before it, such as:

<SA> Normal size<SB> Double size
:

The default character size is Normal <SA>.

Once the attribute indicator is placed then the following characters(s) will be changed to the corresponding size until another attribute is encountered.

* For details please refer to size table in APPENDIX C

Display functions:

26 unique screen effects & function selections are allowed. To define which screen effect is to be used, a *function indicator* must be placed before it, such as:

<FA> Auto Function
<FB> Open From Center
:

The default function is SHIFT LEFT <FS>.* For details please refer to Function in APPENDIX D

B) Timer (schedule) setting:

There are 10 Timers (schedules) available in the display sign, each of which consists of 32 entries and the basic format is as follow:

<IDXX><Tx>WHHMMPPP....[cr][lf]

<Tx> denotes the Timer that will be set, where **x** = A to J

<, T & > are ASCII character "<" "T" & ">" respectively

x is the Timer (schedule) number in ASCII character, i.e.

A	=	Timer A
B	=	Timer B
:		
I	=	Timer I
J	=	Timer J

W denotes the Day of Week where this schedule activates, the valid values are as follow (in a single ASCII character form):

*	=	Every day of the week
0	=	Sunday
1	=	Monday
:		
5	=	Friday
6	=	Saturday

HH denotes the Hour when this schedule activates, the valid values are as follows (in two ASCII character form, 24 hour notation):

**	=	Every hour of the day	00 =	00 hour mid night
01	=	01 hour mid night		
:				
13	=	1 o'clock afternoon		
:				
18	=	6 o'clock evening		
:				
23	=	11 o'clock night		

MM denotes the Minutes when this schedule activates, the valid values are as follows (in two ASCII character form):

**	=	Every minute of the hour
00 to 59	=	minutes

PPP.... denotes the Page sequence in this schedule, the length of the sequence is dynamic upto 32 entries, the valid page number ranges from A to Z.

Commands:

- 1) **Delete Page(s):**
<IDXX><DPx>[cr][lf]
<, D, P & > = ASCII "<","D","P" & ">"
x Page number in ASCII character (A - Z & *)
<DP*> = Delete All pages
<DPA> = Delete page A
:
<DPZ> = Delete page Z

- 2) **Delete Schedule:**
<IDXX><DTx>[cr][lf]
<, D, T & > = ASCII "<","D","T" & ">"
x Timer (Schedule) number in ASCII character (A - J & *)
<DT*> = Delete ALL timers
<DJA> = Delete TIMER A
:
<DTJ> = Delete TIMER J

- 3) **Delete Graphic block(s):**
<IDXX><DGx>[cr][lf]
<, D, G & > = ASCII "<","D","G" & ">"
x Graphic block number in ASCII character (A - Z & *)
<DG*> = Delete All graphics
<DGA> = Delete Graphic block A
:
<DGZ> = Delete Graphic block Z

- 4) **Delete ALL:**
This command will delete all Page(s), Timer(s) and restore all default Graphic blocks.

<IDXX><D*>[cr][lf]
<, D, * & > = ASCII "<","D","*" & ">"

- 5) **Direct Run Page Command**

<IDXX><RPx>[cr][lf] <, R, P & > = ASCII "<","R","P" & ">"
x Page number in ASCII character (A - Z & *)
<RP*> = Restart
<RPA> = Run Page A
:
<RPZ> = Run Page Z

SET CLOCK command:

This is a special command to sync. or set the relative/real time clock of the display unit(s) and it is the only GLOBAL command in this set of protocol. The format as shown below:

<TYMMDDWhhmmss>[cr][lf] <, T & > ASCII "<", "T" & ">"

YY	Year (00 - 99)
MM	Month (01 - 12)
DD	Day (01 - 31)
W	Day of week (0 - 6)
hh	Hour (in 24 hour format, 00 - 23)
mm	Minute (00 - 59)
ss	Second (00 - 59)

APPENDIX AEuropean character table

U#	£	UA	Å	UB	Ä	UC	Á	UD	À	UE	Æ
UF	a	UG	Ç	UH	É	UI	È	UJ	ê	UK	ì
UL	í	UM	Ñ	UN	Ö	UO	Ó	UP	Ò	UQ	Ø
UR	D	US	Ü	UT	Ú	UU	Ù	UV	m	UW	þ
UX	¿	UY	Ð	UZ	ÿ	U\$	¥	Ua	à	Ub	ä
Uc	á	Ud	à	Ue	æ	Uf	â	Ug	ç	Uh	é
Ui	è	Uj	ë	Uk	ï	Ul	î	Um	ñ	Un	ö
Uo	ó	Up	ò	Uq	ø	Ur	ô	Us	ü	Ut	ú
Uu	ù	Uv	û	Uw	ß	Ux	°	Uy	ç	Uz	ÿ

APPENDIX BColor Table for Multi-Color

CA	Dim RED	CJ	Dim LIME	CS	GRN/RED 3D
CB	RED	CK	Bright LIME	CT	GRN/YEL 3D
CC	Bright RED	CL	Bright GREEN	CU	GRN on RED
CD	ORANGE	CM	GREEN	CV	RED on GRN
CE	Bright ORANGE	CN	Dim GREEN	CW	ORG on GRN 3D
CF	Lt YELLOW	CO	YEL/GRN/RED	CX	LIME on RED 3D
CG	YELLOW	CP	RAINBOW	CY	GRN on RED 3D
CH	Bright YELLOW	CQ	RED/GRN 3D	CZ	RED on GRN 3D
CI	LIME	CR	RED/YEL 3D		

Color Table for Mono Color

CA	RED
CB	RED REVERSE

APPENDIX CSize Table

SA	Normal	SB	Bold	SC	Italic
SD	Bold Italic	SE	Flash Normal	SF	Flash Bold
SG	Flash Italic	SH	Flash Bold Italic		

APPENDIX DFunction Table

FA	AUTO	FB	OPEN <---->	FC	COVER <---->
FD	APPEAR	FE	CYCLING	FF	CLOSE <---->
FG	CLOSE ---->	FH	CLOSE --><--	FI	SCROLL UP
FJ	SCROLL DOWN	FK	OVERLAP	FL	STACKING
FM	COMIC 1	FN	COMIC 2	FO	BEEP
FP	PAUSE	FQ	SLEEP	FR	RANDOM
FS	SHIFT <---->	FT	TIME/DATE	FU	MAGIC
FV	THANK YOU	FW	WELCOME	FX	SPEED 1
FY	SPEED 2	FZ	SPEED 3		