In Room
Control Panel

**User Programmable
Touch Control Panel**

ABtUS
SINGAPORE

POWER OFF | POWER ON
AUTO SYN | DOC CAM | LAPTOP
PIC BLANK | DVD PLAYER | DESKTOP
VOL DOWN | VOL UP | NETWORK

Model: **A934-212C-044**

CONTENT PAGE

PRODUCT DESCRIPTION

The **ABtUS A934-212C-044** touch control panel uses a standard 4-wire resistive touch panel, which allows up to a total of 32 command codes with complete user programmable software.

The user friendly Software allows customized programming such as macros setting, feedbacks, control commands, etc. Another characteristic of the panel is the panel button layout and design, it can be easily customized and printed on standard transparencies with icons or clear text buttons

PRODUCT HIGHLIGHTS

- **Automatic backlight fade out**
- **Macro definitions setting can be assign for every single button** (up to 16 different order)
- **Default 3x4 matrix of 12 touch buttons**
- **With 1 x RS-232 or 1x RS-485 (selectable) and 1x RS-232**
- **Ultra low power consumption**

Configuration Diagram:

User Operation Guide

ABtUS®
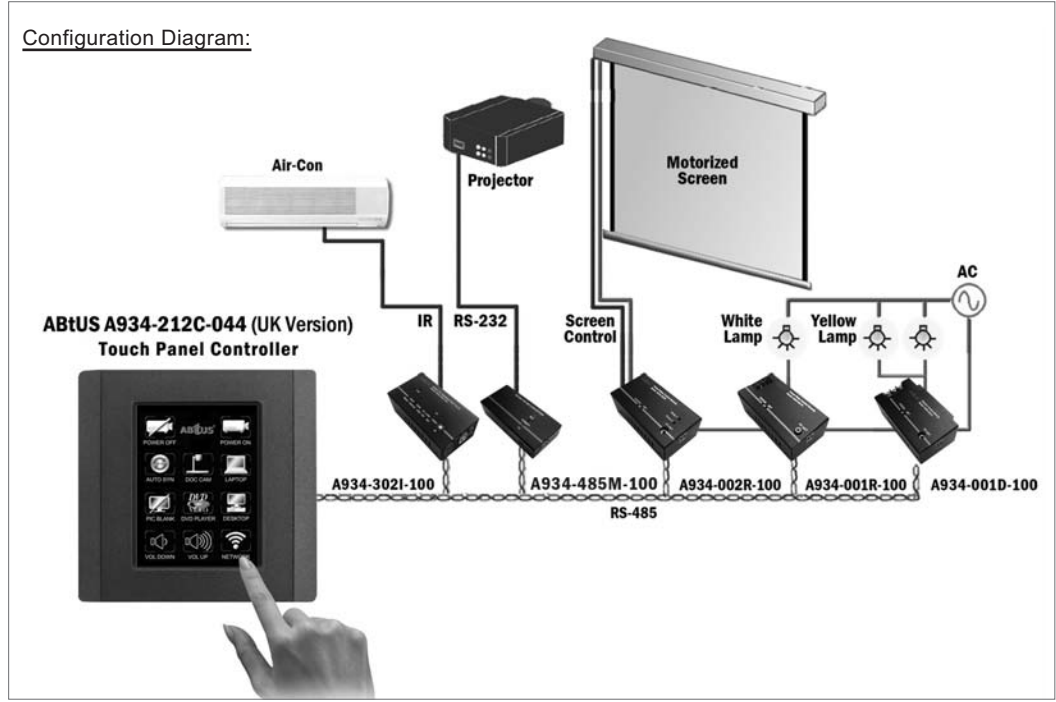
SPECIFICATIONS

INPUT VOLTAGE	12V-DC, 500mA
BACK LIGHT	With white LED light guide plate
COMMUNICATION STANDARD	1 x RS-232 or RS485 (*Selectable) and 1 x RS-232 (Tx Only)
CONFIGURABLE COM PORT	7 or 8 Data Bit and 1 or 2 Stop Bit Baud Rate (1200 to 38400) Parity Bit (Non, Even or Odd)
TOTAL NUMBER OF BUTTON	12
TOTAL NUMBER OF COMMAND SET ALLOW	32
STANDBY CURRENT	35mA
OPERATION CURRENT	65mA
HOUSING	ABS
DIMENSIONS | WEIGHT	(75 x 118 x 14)mm | Weight: 75g
ACCESSORIES	AC-DC Power Adaptor 12V-DC, 500mA 1 x 2 Pin, 2 x 3 Pin Terminal Block

** For detail and updated RS-232 Command protocol for programming, please visit and download from **www.abtussingapore.com**

** Specifications are subject to changes without notice.*
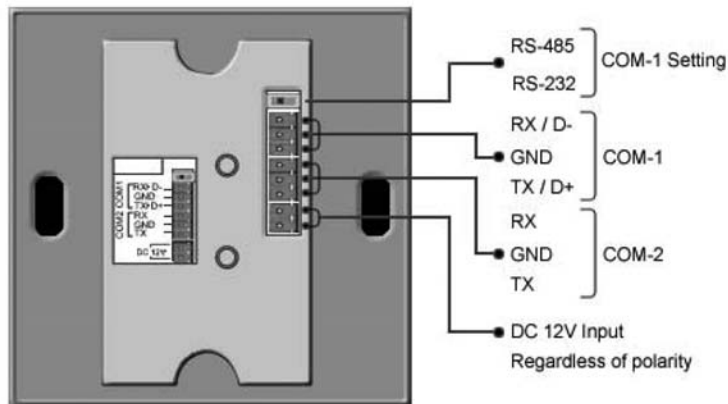
TYPICAL APPLICATIONS

Any professional control system requiring multiple AV, lighting or environmental control.

● Schools (Media Classroom) ● Churches ● Corporate Applications (Meeting Room) ● Home Automation
● Home Theaters ● Hotels In Room Control

SETTING UP

Connecting of cables to A934-212C-044

3.8mm Terminal Block connector to Touch Panel

DC 12V Input Regardless of polarity
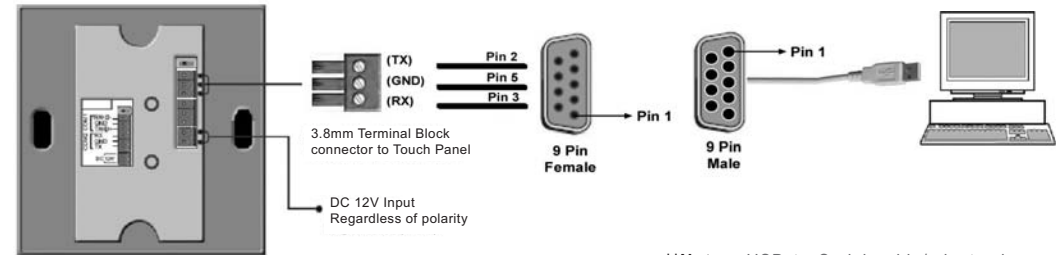
**Note : USB to Serial cable/adaptor is commercially available and not provided with the A934-212C-044 touch panel.

(Please check that the driver for the adaptor have been properly installed before connecting the device)

Connecting of cables to A934-212C-044
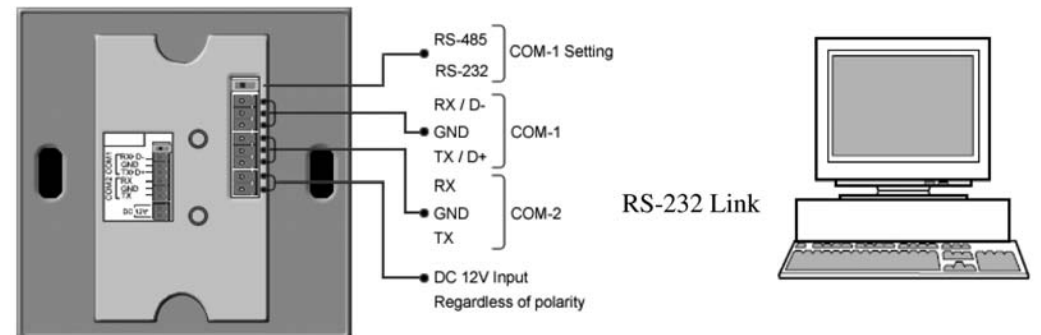
** Note : Be sure that the RS-485/ RS-232 selector is set to RS-232 for COM-1
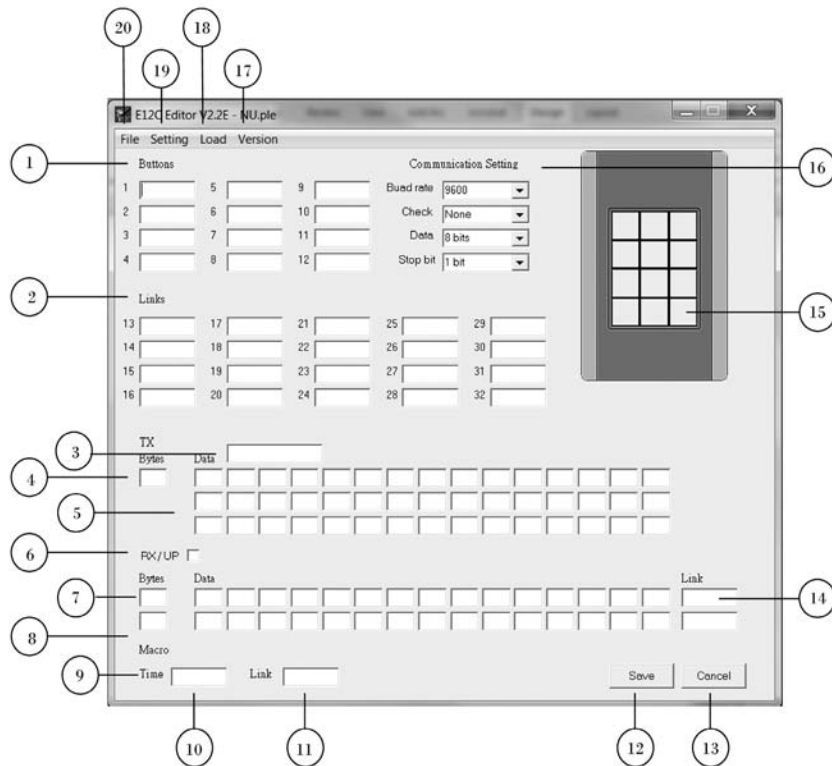
Downloading of Software
The programming software can be downloaded from "download center" in ABtUS Singapore's website or at **http://www.abtussingapore.com/download/E12C_V2.2E(100617).zip**

PROGRAMMING SOFTWARE E12C EDITOR V2.2E OVERVIEW
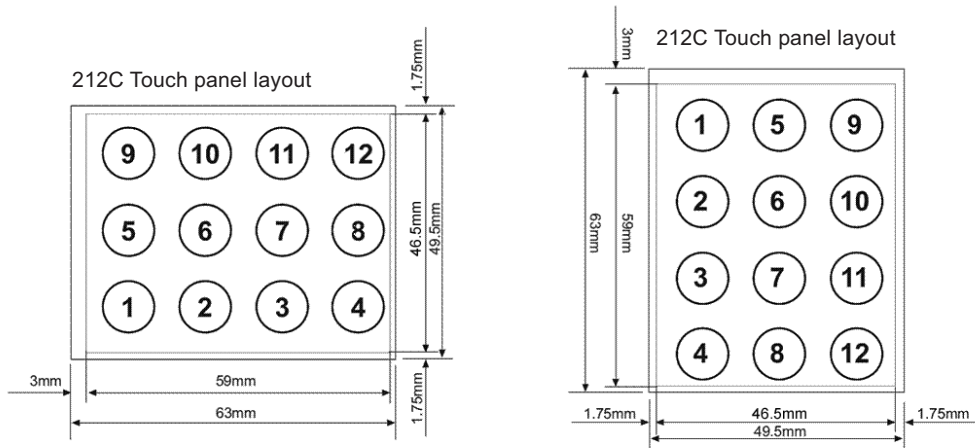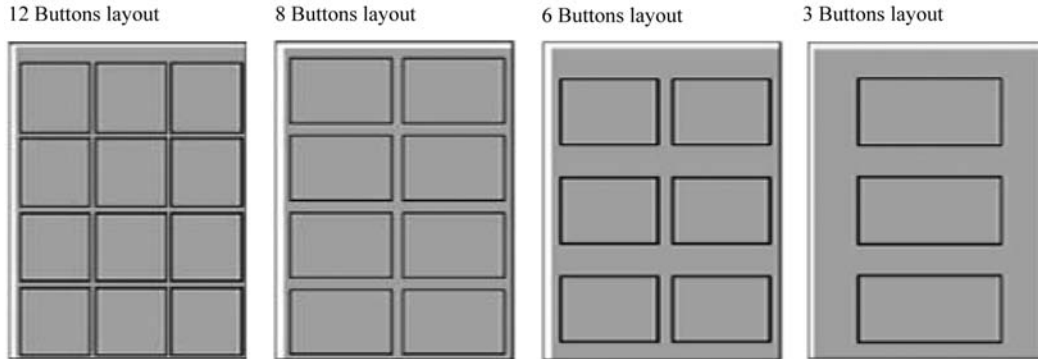
Model: **E12C Editor Version 2.2E**

ITEM		DESCRIPTION
1	Buttons :	Physical "Button" location number and "Function" entry (Button number 1 to 12)
2	Links :	Virtual "Button" location number and "function" entry (Button number 13 to 32)
3	Button Parameter Setup :	*Each buttons are allow to have a independent parameter setting Baud Rate : 1200 to 38400 Parity : None, Odd or Even Data bit : 8 bits or 7 bits Stop Bit : 1 bit or 2 bits
4	TX Bytes :	Total length for the Data entered (*Max. 35 bytes = 2D in Hex per function)
5	Data :	Function/Command code entry (*Hex code ONLY)
6	RX/UP :	RX/UP "check" for "Push" and "Pop" command link "Push" TX data link in Physical or Virtual button. "Pop" TX data link in RX/UP (*Only one command is allow) RX/UP "uncheck" for Return Command link (**Max two return command is allowed)
7	RX/UP Bytes :	Total length for the Data entered (*Max.15 bytes = 0F in Hex per function)
8	RX/UP Data :	Function/Command code entry (*Hex code ONLY)
9	Macro :	Macro setting
10	Macro Delay :	Delay time for macro function (*1 to 15sec) With interval of 1= 0.5sec
11	Macro Link :	Macro link "Physical" or "Virtual" button number
12	Save :	Save each button function and command setup
13	Cancel :	Cancel any button function and command setup changed
14	RX/UP Link :	RX/UP link "Physical" or "Virtual" button number
15	Location Indication :	Indicate the physical location on the touch panel
16	Communication Setting :	Parameter setup (default) Baud Rate : 1200 to 38400 Parity : None, Odd or Even Data bit : 8 bits or 7 bits Stop Bit : 1 bit or 2 bits
17	Version :	Software Version
18	Load :	Upload the configuration and setup to the Touch Panel
19	Setting :	Com port setting
20	File :	New file, Open file and Save file

ABtUS®

BUTTON LAYOUT

The UI layout on the touch panel can be configure into the following:

To configure the UI layout, a separate firmware is required to be loaded. Firmware could be obtained from ABtUS Singapore on request.

12 Buttons layout   8 Buttons layout   6 Buttons layout   3 Buttons layout

212C Touch panel layout

212C Touch panel layout

9	10	11	12
5	6	7	8
1	2	3	4

3mm   59mm
63mm

1.75mm
46.5mm / 49.5mm
1.75mm

212C Touch panel layout

1	5	9
2	6	10
3	7	11
4	8	12

3mm
59mm / 63mm

1.75mm   46.5mm / 49.5mm   1.75mm

Note:
Physical UI Layout Size: 63mm x 49.5mm
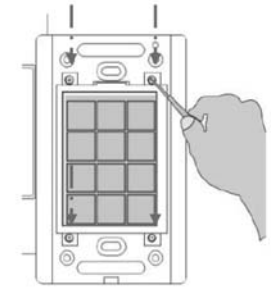Active Widows Area: 59mm x 46.5mm

REPLACEMENT OF UI DESIGN
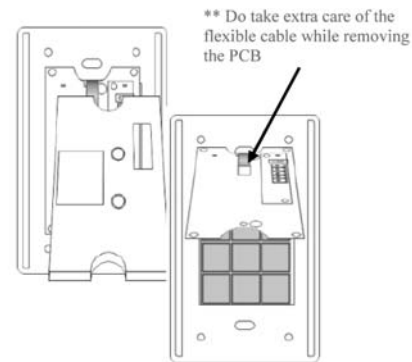
Procedure of having the designed UI replaced :

Step 1 : Lift the "Front cover" up with a small flat screw driver and removed it as shown
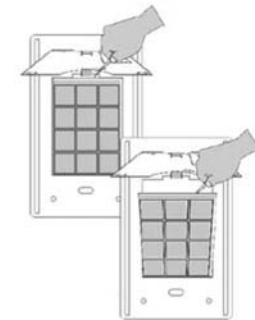
Latch
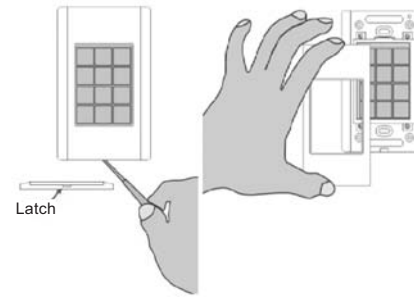
Step 2 : Removed the four screws as shown

Step 3 : Removed the "Back Cover" and the PCB as Shown.

** Do take extra care of the flexible cable while removing the PCB

Step 4 : Remove and replace the UI design printed as shown

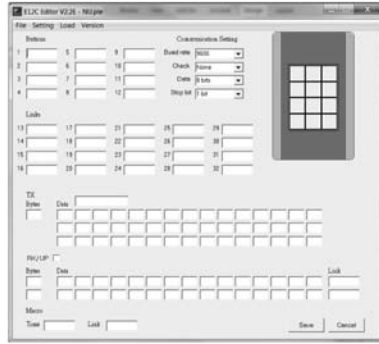**Example :** UI layout design in Landscape and Portrait

UI designed is completely customizable. Users can design their own labels to be printed on transparencies (63x49.5mm) and cut out for use.
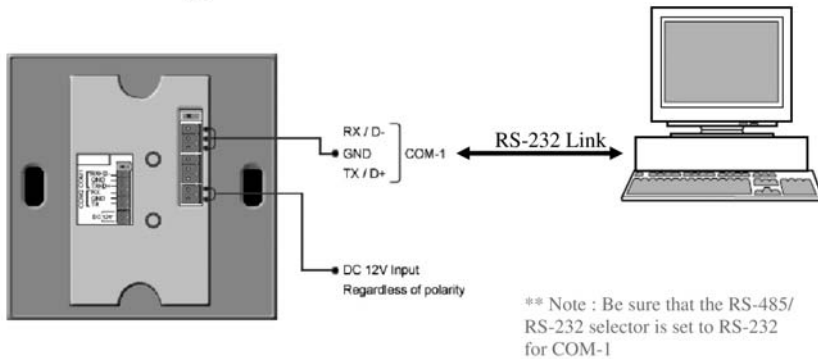
UPLOAD OF PROGRAM

Once the programming setup is done, program can be uploaded to the Touch Control panel accordingly :

Step 1 :   Run the application software **E212C Editor V2.2E**

Step 2 :   Set up the connection between the Touch Control Panel and
PC as shown accordingly

RX / D-
GND   COM-1   RS-232 Link
TX / D+

DC 12V Input
Regardless of polarity

** Note : Be sure that the RS-485/
RS-232 selector is set to RS-232
for COM-1

Step 3 :   Entering "Loading Mode"
Apply DC power supply input while pressing and holding the highlight area of the Touch Panel as
shown. The backlight will now be flashing. Release and the panel is now in "Loading Mode"
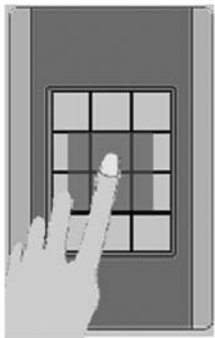
** Note: Panel will return to it normal
mode after 5 sec time out.

UPLOAD OF PROGRAM

Step 4 :   Click "Load" on the application software within 5 seconds from step 3
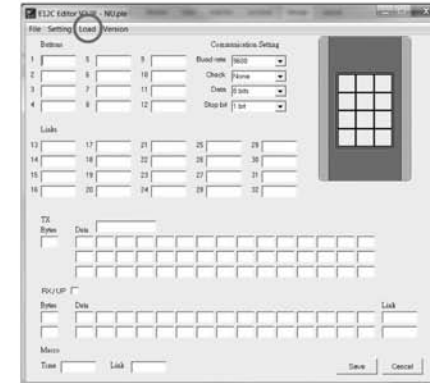
Step 5 :   Software will now try to look for connected devices (Touch Control Panel)
Once done, uploading will start and the Touch Panel back light will stop flashing and start
"Beeping". A "Loading …" Pop up window will appear as below

Loading .....

OK

Step 6 :   A "Device not found" window will shown if connection is unsuccessful.
*Please check RS-232 connector cable as well as the RS-485/RS-232 selector
(*Be sure that the setting is at RS-232)

Device not found

OK

Step 7 :   A "Loading successful" window will appear once the program is successfully uploaded
The touch panel back light will start flashing and "beep" for four times to confirm that the loading
have been successfully done.

Loading successful.

OK

EXAMPLE

Programming of touch panel as a controller controlling a Media Projector with the UI design as shown:
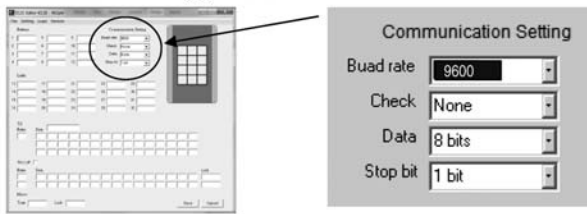
Button #1 Power On Command (Hex):
43 30 30 0D (19200, 8 data bit, Non party and 1 stop bit)
Button #2 Power Off Command (Hex):
43 30 31 0D (19200, 8 data bit, Non party and 1 stop bit)
Button #3 Input RGB-1 Command (Hex):
43 30 32 0D (19200, 8 data bit, Non party and 1 stop bit)
Button #4 Input RGB-2 Command (Hex):
43 30 33 0D (19200, 8 data bit, Non party and 1 stop bit)

** Setting different Baud Rate for each button
Button #5 Switcher Power On Command (Hex):
**43 30 30 0D** (38400, 8 data bit, Non party and 1 stop bit)

* The codes are for the purpose of examples only. Please obtain the hex codes from the individual equipment supplier.

Step 1 : Run the application software **E212C Editor V2.2E and select "New" to create a New Project**

Step 2 : Setup the Parameters accordingly as shown :

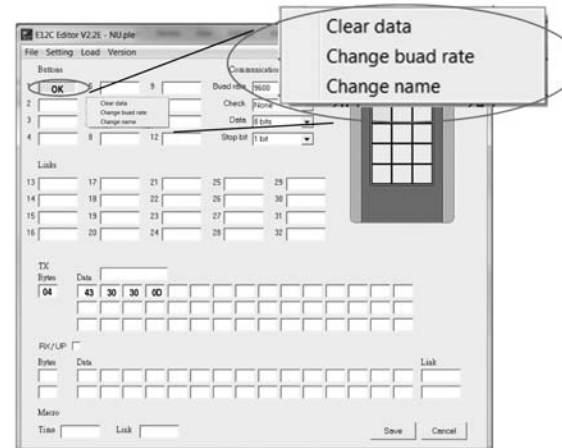**Step 3 :** Setting up the "Power ON" code to its relevant button location (location #1) :
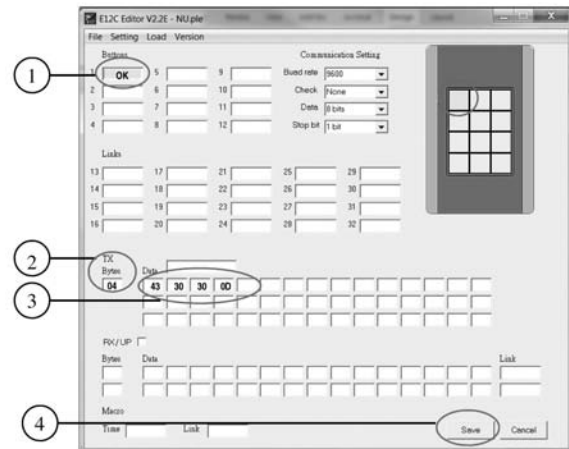
1 Select the button location (Location #1) the button will be high lighted as shown.
2 Key <u>04</u> in "TX Bytes"
3 Key in <u>43 30 30 0D</u> (Power On Command code) in the "Data"
4 Click on "Save" to apply setting and "OK" will appear in highlighted box

Step 4 : Repeat sequence in Step number 3 for the rest of the buttons number 1 to 5 setup accordingly.
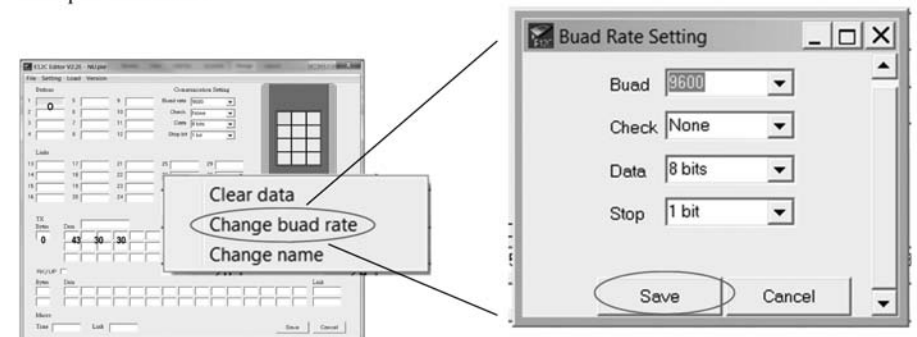
BUTTON FUNCTION NAME AND BAUD RATE SETTING

Once all button command code have been set, the "function name" and "Baud Rate setting" of each button can then be "Name" and "Set" accordingly.

Step 5 : Right Click on the Button that you wish have the "Function Name" or Baud Rate setting changed.
Select "Change name" from the pop up window
Key in the function name within the high lighted button and press "Enter"
Example: "Power ON"

Right Click on the Button that you wish have the "Baud Rate setting" changed.
Select "Change baud rate" from the pop up window
Select the baud rate setting accordingly and click on "SAVE"
Example: "Power ON"

Step 6 : Once completed, the setup can be saved for future reference.
Click on "File" and then "Save File"

Once all of the above is completed, the "program" can then be uploaded to the Touch Control Panel accordingly. Please refer to the procedure in "Upload of Program" for further instructions.

VIRTUAL LINK BUTTON MACRO SETTING

Button 13 to 32 are virtual link buttons that are not to be confused with the 12 physical buttons. Button 1 to 12 allows a total 32 commands to be configured within this touch control panel.

EXAMPLE

Links Button # 1 to button # 13 with time delay of 5sec :

Button #1 Power On Command for projector (Hex):
43 30 30 0D (9600, 8 data bit, Non party and 1 stop bit)

Button #13 Power On Command AV switcher (Hex):
02 20 20 0D (9600, 8 data bit, Non party and 1 stop bit)

Function will perform as followed:
When Button #1 is pressed, "Projector Power ON: **43 30 30 0D"** will be send followed by "AV Switcher Power ON**: 02 20 20 0D"** after 5sec
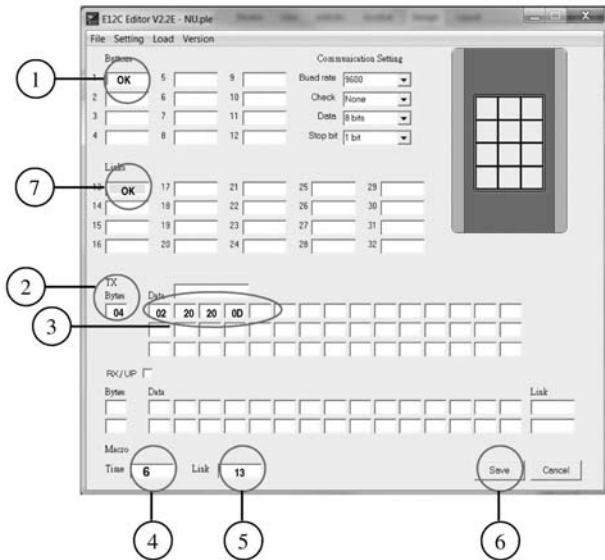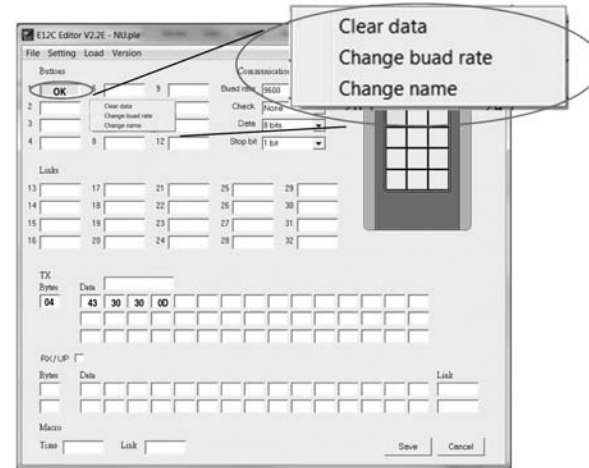

1   Select the button location (Location #1)
    The button will be high lighted as shown.
2   Key **04** in "TX Bytes"
3   Key in **43 30 30 0D**
    (Power On Command code) in "Data"
4   Enter "6" delay 5sec (*allows 1 to 99sec)
5   Enter links button # 13
6   Click on "Save" to apply setting
    and "OK" will appear in a highlighted box

Setting of virtual button # 13

5   Select the button location (Location #13)
    The button will be high lighted as shown.
6   Key **04** in "TX Bytes"
7   Key in **02 20 20 0D**
    (AV Switcher Power On Command code)
    in the "Data"
8   Click on "Save" to apply setting
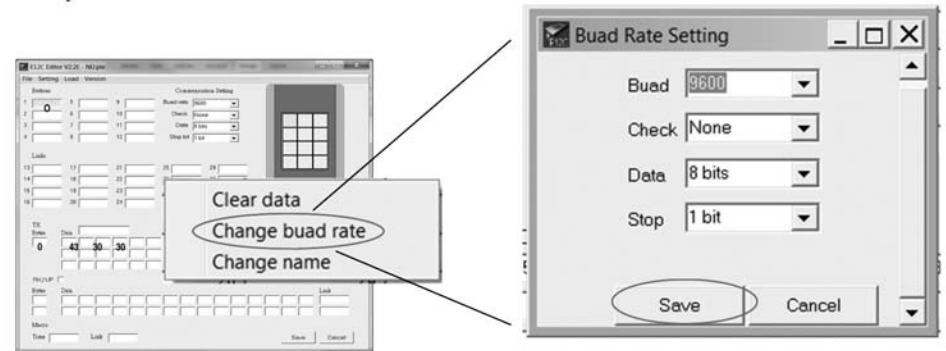   and "OK" will appear in a highlighted box

BUTTON FUNCTION NAME

Once all button command codes have been set, the function name and Baud Rate setting for each button can then be "Name" and set accordingly.

Step 5 :   Right Click on the Button that you wish have the "Function Name" or Baud Rate setting changed.
           Select "Change name" from the pop up window
           Key in the function name within the high lighted button and press "Enter"
           Example: "Power ON"

Right Click on the Button that you wish have the "Baud Rate setting" changed.
Select "Change baud rate" from the pop up window
Select the baud rate setting accordingly and click on "SAVE"
Example: "Power ON"

Step 6 :   Once completed, the setup can be saved for future reference.
           Click on "File" and then "Save File"

Once all of the above is completed, the "program" can then be uploaded to the Touch Control Panel accordingly. Please refer to the procedure in "Upload of Program" for further instructions.

Specifications are subject to changes without notice.

RX/UP SETTING

"RX" : The command transmitted can be set based on the RX return command whereas "UP" will acts as a "Push" and "Pop" action.

Example : press and hold for dimming up of lights and release to stop dimming.

EXAMPLE "RX" SETTING

Setting a Button Location #1 as a "Power ON" and "Power Off" function with status returned:

Command of controlled device are as followed:

Power On (Hex):	**43 30 32 0D**	Request Power Status (Hex):	**23 30 30 0D**
Power Off (Hex):	**43 30 31 0D**	Status ON Return (Hex):	**23 30 32 0D**
		Status OFF Return (Hex):	**23 30 31 0D**

Function performed will be as followed:
When Button #1 is pressed, panel will send a status request on the power status **"23 30 30 0D"** and will follow with a Power ON command if return status = OFF **"23 30 31 0D"** and Power OFF command if return status = ON **"23 30 32 0D"**
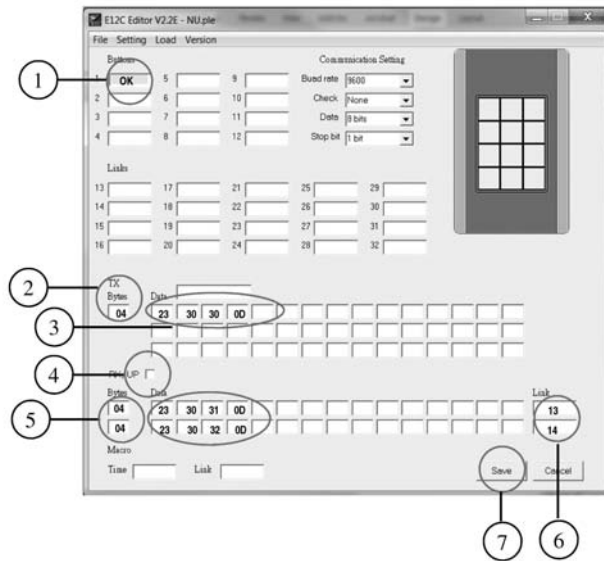
1 Select the button location (Location #1) the button will be high lighted as shown.
2 Key 04 in "TX Bytes"
3 Key in 23 30 30 0D
   (Request Power Status Command code) in the "Data"
4 Click on "Save" to apply settings
5 Select link button # 13 and enter "Power ON" command and "Power Off" at # 14
6 Click on "Save" to apply settings and "OK" will appear in a highlighted box
7 Key in the returned Data for both "Power ON" and "Power OFF" in "Item #5"
8 Set the "Link" button accordingly
9 If return status is "Power OFF" link to "Button" 13 ("power ON". Command)
10 If return status is "Power ON" link to "Button" 14 ("power OFF" command)

EXAMPLE "UP" SETTING

Setting a Button Location #1 for a "Push" and "Pop" function:

Command of controlled device are as followed:
Dimming Up (Hex):   **80 00 57 02 00 00 01 00 FE**
Dimming Stop (Hex):   **80 00 57 02 00 00 00 00 FE**

Function performed will be as followed:
Press and hold Button #1, panel will send Dimming Up command to Dimmer to "Dim-up." A "Dimming Stop" command will be sent automatically once the button is released.
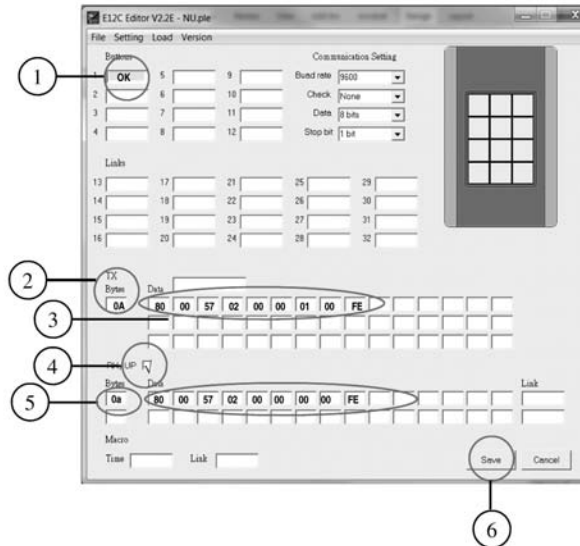
1 Select the button location (Location #1)
   The button will be highlighted as shown.
2 Key 0A in "TX Bytes"
3 Key in 80 00 57 02 00 00 01 00 FE
   (Set Dimmer to dim-up)
4 Checked RX/UP as shown
5 Key in the "Dimming Stop" command
   80 00 57 02 00 00 00 00 FE accordingly
   with Bytes length 0A
6 Click on "Save" to apply settings
   and "OK" will appear in high lighted box
7 Do remember to set the baud rate and button function name accordingly after the above settings have been programmed