Panel One Quick Reference

Arduino Experiment Control Panel

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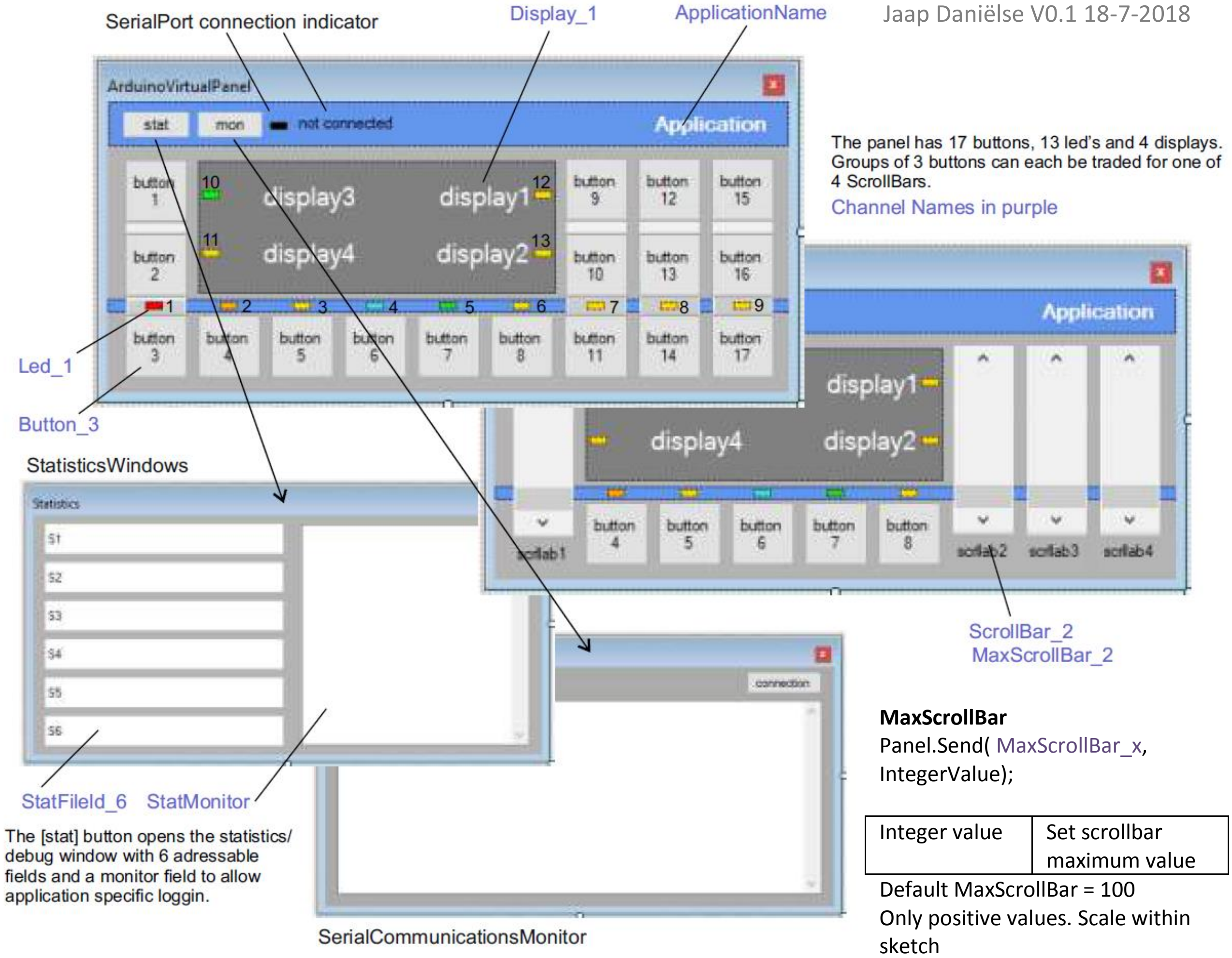

The panel has 17 buttons, 13 led's and 4 displays. Groups of 3 buttons can each be traded for one of 4 ScrollBars.

Channel Names in purple

The [stat] button opens the statistics/ debug window with 6 adressable fields and a monitor field to allow application specific loggin.

Application name

Panel.Send(ApplicationName, “My Application Name”);

string	Display text as application name

Display

Panel.Send(Display_x, Value);
Panel.Send(Display_x, false);

Boolean False	Display invisible
Boolean True	Display visible
string	Display text
byte	Display as text
integer	Display as text
long	Display as text
$NORMAL	Normal font
$BOLD	Bold font
$BIG	Large font

Panel.Sendf

Panel.Sendf(StatField_x, “Rec. %d units”, Value);

Using printf formatting.
See Arduino documentation.

Led

Panel.Send(Led_x, “$RED”);
Panel.Send(Led_x, false);

Boolean False	Led Invisible
$OFF	⬛
$RED	🟥
$GREEN	🟩
$YELLOW	🟨
$ORANGE	🟧

Scrollbar

Panel.Send(ScrollBar_x, “text”);
Panel.Send(ScrollBar_x, IntegerValue);

Boolean False	ScrollBar invisible
Boolean True	ScrollBar visible
string	ScrollBar label text
Integer value	Set scrollbar position

Receive

Integer	Scrollbar value in panel public var vpr_int

MaxScrollBar

Panel.Send(MaxScrollBar_x, IntegerValue);

Integer value	Set scrollbar maximum value

Default MaxScrollBar = 100
Only positive values. Scale within sketch

Button

Panel.Send(Button_x, “text”);
Panel.Send(Button_x, “$ONOFF”);

Boolean False	Button Invisible
Boolean True	Button Visible
Text	Button text

Send special text

$ONOFF	○●
$LEFT	◀
$RIGHT	▶
$UP	▲
$DOWN	▼
$DOT	●
$LTURN	↺
$RTURN	↻
$RUN	▶
$PAUSE	❚❚
$STOP	■
$SET	✱

Receive

void	Button pressed

Statistic Field

Panel.Sendf(StatField_x, “Rec. %d units”, Value);

string	Display text
byte	Display as text
integer	Display as text
long	Display as text

Statistic Monitor

Panel.Send(StatMonitor, “debug message”);

string	Log message

PanelConnected

Receive only

void	Panel has connected

! On receive send panel layout

DynamicDisplay

Panel.Send(DynamicDisplay, true);

Boolean True	Set panel to send req. every 500 ms.

StaticDisplay

Panel.Send(StaticDisplay, true);

Boolean True	Set panel to send req. when button clicked.

MinimalPanel Sketch

One button, one led and one (auto updated) display

```
// Minimal Panel
#include "VirtualPanel.h"   // Panel Library
#include "PanelOneV01.h" // Panel One Channel declaration

VirtualPanel MyPanel(PanelID, PanelCallback, Serial, 115200);

boolean Power = false; //application power variable
int Value; //application value variable
```

Include library and chanel declaration (in .h file as part of your sketch) and create the panel object

```
void setup()
{ MyPanel.Init(); // VirtualPanel.Initialize - init panel protocol and serial port
}
```

Include Mypanel.Init() in setup() to initialize the serial port

```
void loop()
{ MyPanel.Receive(); // VirtualPanel.Receive - handle incoming panel data
  if (Power) Value = random(1,1000); else Value=0;  //application logic :)
}
```

Include panel.receive in loop() to handle incoming commands and data

```
void PanelCallback(int channel, int type)
{ // called through Panel.Receive when receiving incoming data
  switch (channel)
  {
    case PanelConnected:
    { // panel layout request
      MyPanel.Send(ApplicationName, "MinimalPanel"); // set the application name
      MyPanel.Send(DynamicDisplay, true); // set panel to requests dynamic values
      MyPanel.Send(Button_3, "$ONOFF"); // make button_3 a power button (power symbol)
      MyPanel.Send(Led_1, "$OFF"); // activate led_1 (above the power button) and set it to off
      break;
    }

    case Button_3:
    { // power button pressed
      Power = !Power; // toggle power var
      if (Power) MyPanel.Send(Led_1, "$RED"); else MyPanel.Send(Led_1, "$OFF");  // led on/off
      break;
    }

    case DynamicDisplay:
    { // dynamic display request
       MyPanel.Sendf(Display_1,"%03d", Value);  // Display value
    }
  }
}
```

Create the PanelCallback routine to handle commands coming from the panel exe. Callback declaration in PanelOneV01.h

Use PanelConnected to initialize the panel layout; Name, buttons, leds etc.

Buttons and ScrollBars each have their own case. Used to invoke the required actions.

If enabled DynamicDisplay is sent from the panel every 500 ms. to request a dynamic display (measured values) update.

Handling scrollbar

Set initial value: Mypanel.Send(ScrollBar_1, value); // value between 0 – max. (def. 100)

Set maximum value (in PanelConnected) MyPanel.Send(MaxScrollBar_1, value); // positive only (scale in sketch)

```
case ScrollBar_1:
{ //scrollbar change
    MyScrollValue = MyPanel.vpr_int ; // copy panel value to sketch variable (can only be int)
    MyPanel.Sendf(Display_2,"%03d ", MyScrollValue ); // Display value
}
```

Scrollbar does not invoke StaticDisplay to avoid serial congestion: Send static data from case. Value is transferred via panel public var.