



# ***VIPpanel Demo Application***

V1.0

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1)	INTRODUCTION .....	3
2)	CONFIGURATION OF A FRONT PANEL FOR THE DEMO-PROJECT .....	4
3)	MENUS.....	5
4)	OPERATING MODES .....	6
5)	CONCLUSION.....	7
6)	ONLINE DEMO .....	7

## 1) Introduction

The **VIPpanel** is a Windows program which allows a complete front panel with keys, LEDs and LC-Display to be simulated. The **VIPpanel** enables in addition the creation and simulation of your own front panel designs and it can be used as input-/output device for connection to your own hardware and embedded applications. The communication between your hardware/application and the **VIPpanel** takes place either via the serial port or Ethernet LAN interface of the PC.

The **VIPpanel** design, the number of keys and their sizes, the number of LEDs and the type of LCD display are all freely definable.

Based on your design data we can deliver the corresponding hardware in a short time. During this time, the **VIPpanel** can be used for the continuation or completion of the application development....

In order to allow you to test the features of the **VIPpanel** as well as you own designs immediately and without the need to develop a test program, the **VIPpanel** is delivered together with a Demo-application. The Demo-application can either be compiled as a VisualStudio project or simply be installed and its program (.exe) executed.

Detailed information concerning the operation of the Demo-project and how you can take advantage of the simulation environment can be found in the 'Application Note: **VIPpanel** Demo-Project'.

## 2) Configuration of a front panel for the Demo-Project

If you wish to test your own front **VIPpanel** designs together with the Demo-project, you should configure the keys and LEDs correspondingly:

### **Keys:**

The Demo-application requires 5 keys with the Key-IDs 0, 1, 2, 3 und 4

- ◉ ID 0 - Enter / OK
- ▲ ID 1 - Up key
- ▼ ID 2 - Down key
- ◀ ID 3 - Left key
- ▶ ID 4 - Right key

You can also define for keys (Key-IDs 5...31). The demo-application handles such keys by writing a message in the second line of the display the first time the key is pressed. It also assigns a key beep to this key and it will beep on each subsequent press.

The key beeps can be reset by holding the Enter key pressed for longer than 2 seconds.

### **LEDs:**

The Demo-Application controls 3 dual-colour LEDs with the LED-IDs 0 to 5:

LED 1 ID 0 active = red; ID 4 active = green; ID 0 und ID 4 active = orange

LED 2 ID 1 active = red; ID 5 active = green; ID 1 und ID 5 active = orange

LED 3 ID 2 active = red; ID 6 active = green; ID 2 und ID 6 active = orange

These can be controlled in the menu „Output Control“, as described below.

### 3) Menus

The Demo-application coordinates a small menu by using direction keys and an enter button.

When the program starts the text „VIPpanel Demo“ is written in the first line of the display and the text „Enter to begin“ is then written one character at a time (0,25s delay between characters) in the second line. The LCD cursor is set to blink mode until the user presses the „Enter“ key.

Notes: You can follow the messages between Demo-application and **VIPpanel** by activating the TX/RX Monitor.

You can reset the **VIPpanel** and the Demo-Application by using the reset button in the LCD-Control panel.

The various menu points can be scrolled through using the "Up" and "down" keys and activated by pressing the „Enter“ key.

The following menus are available:

„Display Font Set“

The Font Set in the simulated LCD is shown. The flow direction can be controlled using the "Left" and "Right" keys while the "Enter" key freezes the display. When the "Enter" key is pressed again the test continues again.

The test is quit with the "Up" key.

„Contrast/Light“

The background light intensity of the LCD display can be controlled by using the "Left" and "Right" keys.

The contrast level of the LCD display can be controlled by using the "Up" and "Down" keys.

The test is quit with the "Enter" key.

„Test Tones“

Test of the buzzer output.

The frequency of the buzzer tone can be controlled by using the "Up" and "Down" keys.

The duration of the buzzer tone can be controlled by using the "Left" and "Right" keys.

The test is quit with the "Enter" key.

„Control Output“

Test of the LEDs and a simulated external output in the application window.

The "Up" key controls the LED output ID 0. The LED glows red while the key is held down. After 1,5s the LED changes to green since the LED output ID 3 is enabled.

The "Right" key controls the LED output ID 1. The LED glows red while the key is held down. After 1,5s the LED changes to green since the LED output ID 4 is enabled.

The "Down" key controls the LED output ID 2. The LED glows red while the key is held down. After 1,5s the LED changes to green since the LED output ID 5 is enabled.

The "Left" key controls all LED outputs together. The LEDs glow orange while the key is held down. The switch in the application windows is also closed by this key.

The test is quit with the "Enter" key.

„Volt Meter“

Test of an external, simulated analogue input from the application windows.

The "Left" key reduces the simulated voltage, which is displayed as a bar graph level in the LCD.

The "Right" key increases the simulated voltage, which is displayed as a bar graph level in the LCD.

The test is quit with the "Enter" key.

„Shift Mode“

Characters are displayed in the LCD and moved using the LCD shift mode.

The shift direction can be controlled by using the "Left" and "Right" keys and the operation can be paused by pressing the "Enter" key. A further activation of the "Enter" key restarts the test.

The test is quit with the "Up" key.

„Elastic man“

The Demo-application defines graphical symbols in the user definable characters region and performs a simple animation.

The animation can be paused by pressing the "Enter" key. A subsequent press allows the animation to continue.

The test is quit with the "Up" key.

*Notes: not all front panels have the feature support to allow all tests to work. For example, the control of the LCD Display contrast requires the corresponding hardware capability. Such options are found under **Edit | Front panel Model** and can be modified for test purposes, even if the front panel model doesn't usually support it.*

## 4) Operating modes

The Demo-application starts in the operation mode 0x00.

Once the text „Enter to begin“ has been completely written, the mode is changed (in simulation and serial operational modes) to event controlled with telegram counters, check sum and key acks (mode 0x0f) [LAN operation is described below and differs slightly].

You can also test other operating modes if desired and monitor the data transfer using the TX/RX monitor. This can be set while the text („Enter to begin“ is still displayed in the LCD and the "Enter" key has not yet been pressed. The following keys are used to modify the mode:

- "Up" key - Key ACK On/Off
- "Down" key - Telegram counter On/Off
- "Left" key - Check sum On/Off
- "Right" key - CRC-16 On/Off

Once the setting has been modified as desired, the application can be restarted by pressing the reset button in the LCD Control panel. The new settings will now be used and remain valid until the **VIPpanel** is quit.

Also the simplest mode (0x00) may be used when the connections adequately secure for your application. The realisation of the protocol is in this case also very simple.

When LAN mode is selected, the application automatically switches to the mode 0x1b (CRC16, Telegrams with counter, Kay ACK and event controlled). This setting corresponds to the default mode of our LAN capable front panel types and thus enables the connection from any **VIPpanel** to our demo installation without parameter exchange.

## 5) Conclusion

The Demo-Application enables fast testing of standard or user defined front panels. Using a simple menu operation typical display features are shown along with tests of different functions including inputs and outputs.

Along with the functions demonstrated by the Demo-application, all other features of the **VIPpanel** can be exercised. The LCD Control Panel allows for example experimenting with the LCD characteristics and the protocol telegrams between **VIPpanel** and the Demo-application can be analysed with the TX/RX Monitor.

The Demo-application can be used in pure **simulation mode** or in **parallel mode**. This way **VIPpanel** conform hardware can be controlled via the serial

The Demo-project can be compiled for a 8051 compatible microcontroller and is therefore also operational on embedded hardware.

## 6) ONLINE DEMO

Visit our Homepage [www.mjbc.ch](http://www.mjbc.ch). Here you will find the necessary configuration settings to allow your **VIPpanel** to control a front panel at our location. A web cam (link at our web site) allows you observe the front panel!

*Note: The **VIPpanel** verifies whether the front panel is already in use or not. Should it be blocked by another user, you can try again a little later. You can also protect the connection against interruption by another user. This blocking time is however limited to 5 minutes.*

***We hope that you enjoy the test!***