

## Communicating Between the VTouch Plus Gateway and Third-Party Smart Home Controllers

### 1. General

VTouch Plus switches are designed to allow complete integration with third-party Smart Home Controllers. The steps required to establish this integration are described below.

### 2. System Components

The system consists of up to 50 VTouch Plus switches, a VTouch Plus Gateway (**VP Gateway**) and a third-party Smart Home Controller (**Host**).

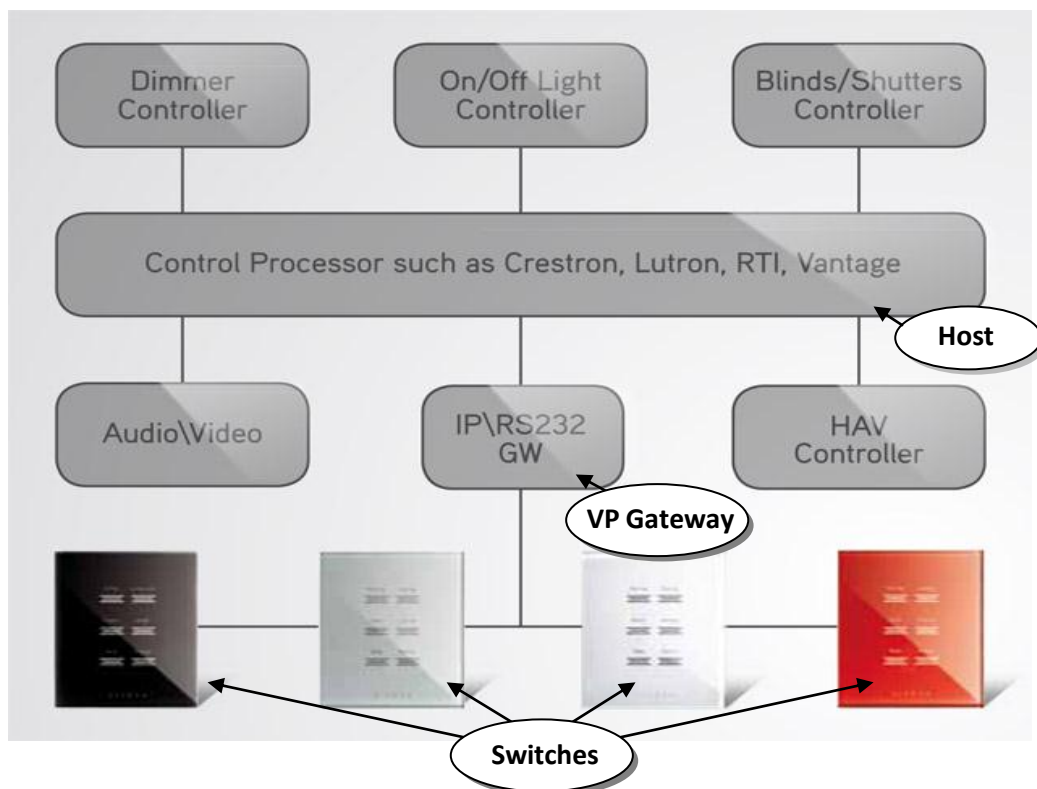


Figure 1: VTouch Plus System Connection

The VTouch Plus switches are labeled “Nodes” and are numbered as Node 01, Node 02, Node 03, ..., up to Node 50.

The switches are connected via four-wire bus (two wires for 12VDC power supply and two for Data) to the VP Gateway. The VP Gateway is connected via RS-232 or IP to the Host.

The VP Gateway manages the communication between the switches and the Host as described below.

The switches are configured by a PC connected to the VP Gateway via a USB connection.

### 3. Messages from VP Gateway to Host When a Key is Pressed

The VP Gateway communicates with all the switches (Nodes) in the system and delivers an appropriate message to the Host each time a key is pressed.

Each key can be configured to one of three different Key Types. The message that is sent from the switch to the Host depends on the Key Type. The Key Type provides maximum flexibility for fully functional operation of all the electrical, HVAC, and A/V devices in the home or office, such as: Lights, Dimmers, Blinds/Shutters, A/V, HVAC, etc.

The following describes the Key Type features:

1. **Off (not active)** – the key will not react when is pressed
2. **Satellite** – the Node will send S (Short press) or D (Double Click – if enabled), or L (Long press) and R (Release). By default, the timing for the short press is less than 1000 milliseconds.
3. **Push Button** – the Node will send P when a key is pressed and R when a key is released.

The following describes the message:

**S:NN:K:A<CR><LF>**

Where:

**S** = Indicates the Key's status report from VP Gateway to Host

**NN** = Node number. Two ASCII characters: 01-50.

**K** = Key number. One ASCII character: 1-8.

**A** = Action. One ASCII character, where:

for Satellite key: **S** (Short), **L** (Long), **R** (Release), or **D** (Double press, if enabled).

for Push Button key: **P** (Press), **R** (Release).

#### Satellite Key Examples

1. Satellite key #2 of node 04 was pressed for a short time: **S:04:2:S CR LF**.  
The message will be sent immediately after release of the key.
2. Satellite key #2 of node 04 was pressed for a long time (more than 1000 milliseconds):  
**S:04:2:L CR LF**.  
The message will be sent immediately after the long press is detected.

Note: A message R will always be sent after the L message as the following: **S:04:2:R CR LF**

#### Push Button Key Examples

1. Push-Button key #7 of node 10 is pressed: **S:10:7:P CR LF**.  
The message will be sent immediately as the key is pressed.
2. Push-Button key #7 of node 10 is released: **S:10:7:R CR LF**.  
The message will be sent immediately after release of the key.

#### 4. Messages from the Host to Control the Switch LEDs

The Host sends the following message to the VP Gateway in ASCII format in order to control the Orange and Blue LEDs of each switch. Each message is terminated by a Carriage Return and Line Feed. There is no ACK from the VP Gateway:

**L:NN:K:A<CR><LF>**

Where:

**L** = Indicates that the Host is changing the status of the switch LEDs.

**NN** = The Node number. Two ASCII characters: 01-50.

**K** = The LED number. One ASCII character, where:

**1-8** - for one orange LED,

**A** - for all orange LEDs,

**B** - for background blue LEDs.

**A** = Action. One ASCII character, where:

**O** = On

**F** = Off

**B** = Slow blink

**Q** = Fast blink

**T** = Toggle

**0-4** = Intensity setting the blue LEDs (0 =Minimum,  
4 =Maximum).

##### LED Control Switch Examples:

1. Turn on Orange LED key #3 of Node 02: **L:02:3:O CR LF**
2. Turn off all LEDs of Node 03: **L:03:A:F CR LF**
3. Toggle LED light key # 5 of Node 01 : **L:01:5:T CR LF**
4. Slow blink LED key # 3 of Node 02: **L:02:3:B CR LF**

## 5. Configuration of the switches by the Host

The switches are configured by a PC via the USB port. However, part of the configurations can be done by the Host (via RS-232 port), as described below:

### 5.1 Setting up the Key Type

Each key can be configured to one of three different Key Types. The message that is sent from the switch to the Host is in accordance with the Key Type. The Key Type provides maximum flexibility for fully functional operation of all the electrical, HVAC and A/V devices in the home or office, such as Lights, Dimmers, Blinds/Shutters, A/V, HVAC, etc.

The following describes the Key Type features:

**Type = O (Off)** – the key is disabled. No message is sent from the VP Gateway to the Host in this mode when the key is pressed.

**Type = S (Satellite)** – the VP Gateway will send to the Host a character S (Short press) when the key is pressed for a short period of time, or L (Long press) when the key is pressed for a long period of time. After sending the L, the Gateway will send R (Release) when the key is released. Also, D is sent when a Double Click is detected (if enabled). The timings for Short/Long and Double-Click periods are programmed by the PC via USB port.

**Type = P (Push Button)** – the VP Gateway will send P (Press) when the key is pressed or R (Release) when the key is released.

The following describes the message:

**W:NN:K:T<CR><LF>**

Where:

**W** = Indicates that the Host is changing a Key Type.

**NN** = The Node number. Two ASCII: 01-50.

**K** = The Key number. One ASCII character, where:

**A** - for All Keys,

**1-8** - for a specific Key.

**T** = Type. One ASCII character: where:

**O** (disable)

**S** (Satellite)

**P** (Push Button)

#### Example:

To set key number 1 of Node number 03 to Satellite, the command will be:

**W:03:1:S<CR><LF>**

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