**Macro Reference**

/// int iSrc: source keys

///int iType: Macro Play Mode

///int iTimes: Execution times

///int iEventLen: event counts

///pData: the contents array of event

public struct MacroInputContent\_DisplayPad

{

public int iSrc;

public int iType;

public int iTimes;

public int iEventLen;

[MarshalAs(UnmanagedType.ByValArray, ArraySubType = UnmanagedType.Struct, SizeConst = MAX\_KEYBOARD\_EVENTS)]

public KEYMAP\_EVENT[] pData;

};

public struct KEYMAP\_EVENT// total size = 4

{

public byte keyByte;

public byte keyActionPage; // Bit 0~3 = KeyAction, Bit 4~7 = KeyPage

public ushort timer;

public byte keyAction

{

get { return Convert.ToByte(this.keyActionPage & 0x0f); }

set { this.keyActionPage = Convert.ToByte((this.keyActionPage & 0xf0) + (value & 0x0f)); }

}

public byte keyPage

{

get { return Convert.ToByte((keyActionPage >> 4) & 0x0f); }

set

{

this.keyActionPage = Convert.ToByte((this.keyActionPage & 0x0f) + ((value & 0x0f) << 4));

}

}

};

/// <summary>

/// Change the key to the launch functions.

/// </summary>

/// <param name="structMacro">>Struct of MacroInputContent </param>

/// <param name="ID">control the target, the vaule is not zero</param>

/// <returns>bool: true Success，false Fail</returns>

bool DisplayPadSetFullMacroData (DisplayPadSDK.MacroInputContent\_DisplayPad structMacro, int ID);

**Play Type (Macro Mode)**

|  |  |  |
| --- | --- | --- |
| **Mode** | **Value** | **Explanation** |
| Play once | 1(0x01) | Macro executes once |
| Loop mode | 2(0x02) | Set loop count |
| Toggle | 3(0x03) | Loop execution, click start, click end |
| Press | 4(0x04) | Press the key to start, release the key to end |

|  |  |  |  |
| --- | --- | --- | --- |
| **KEYMAP\_EVENT** | **Byte Explanation** | | **Byte value** |
| BYTE keyByte | Target Key Code(Low byte). | | Reference Appendix A. key Table. (0x001~0x0EF) and Extend Function (0x120 ~ 0x145)  **If “keyByte is 0xFF” and “keyPage, KeyAction are 0xF”, Macro will be end.** |
| BYTE keyPage: 4 | | Target Key Code(Up byte 4bits) | |
| BYTE keyAction: 4 | Action definition(LOW byte 4bits) | | Reference Action definition table.  Keypage 0xF, keyAction 0x0C: No event simply delayed action  Keypage 0xF, keyAction 0x0D: change the capslock status |
| WORD timer | Delay Time | | Delay after sending Keybyte .Minimum unit 1ms  If KeyAction is 3, the value is Amount of movement  PS: This value is recommended to be at least greater than 3ms. |

PS: The last macro event must be set tokeyByte = 0xFF, keyPage = 0xF, keyAction = 0xF, timer = 0x0000.

|  |  |
| --- | --- |
| **Action definition** | **Byte value** |
| 0 | To be defined |
| 1 | Release the button |
| 2 | Press the button |
| 3 | Scroll wheel |
| 4 | Mouse XY movement |

**MacroContent Struct**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| BYTE byKeyType | | BYTE byDataIndex | | BYTE byDataIndex2 | | KEYMAP\_EVENT evt | | WORD wMacroSize | |
| 0x01 : Keyboard | | 0x01~0xFE(Reference Key Table) | | NULL | | NULL | | NULL | |
| 0x02 : Mouse | | 0x01 : left click  0x02 : right click  0x03 : scroll click  0x04 : button4  0x05 : button5  0x09 : scroll up  0x0A : scroll down  0x0B : move top left  0x0C : move top  0x0D : move top right  0x0E : move right  0x0F : move bottom right  0x10 : move bottom  0x11 : move bottom left  0x12 : move left | | NULL | | NULL | | NULL | |
| 0x03 : Multimedia | | 0x01 : volume+  0x02 : volume-  0x03 : mute  0x04 : play/pause  0x05 : previous track  0x06 : next track  0x07 : stop  0x08 : media select  0x09 : mail  0x0A : calculator  0x0B : my computer  0x0C : www search  0x0D : www home  0x0E : www back  0x0F : www forward  0x10 : www stop  0x11 : www refresh  0x12 : www favorite | | NULL | | NULL | | NULL | |
| 0x05 : Macro | | Play times  0x00  0~255  0x00  0x00 | | Play type  0xFB : play once  0xFA : loop mode  0xF9 : toggle  0xF8 : press | | The reference macro event is fixed at 4 bytes. | | Return the byte sizes  The number of events is equal to size divided by 4 | |
| 0x06 : Shortcut | | 0x01~0xFE(參考Key Table)  0x00: Disable | | Bit[0]: Ctrl  Bit[1]: Shift  Bit[2]: Alt  Bit[3]: GUI | |  | |  | |
| 0x07 : Launch Program | | 0x01~0xFE(參考Key Table) | | NULL | | Please convert to byte array | | Return the byte sizes | |
| 0x0A : ACPI | | 0x01 : Power  0x02 : Sleep  0x03 : Wakeup | | NULL | | NULL | | NULL | |
| 0x0B : Disable | | 0x00 | | NULL | | NULL | | NULL | |
| 0x0C : Function Key | | 0x01 : profile1  0x02 : profile2  0x03 : profile3  0x04 : profile4  0x05 : profile5  0x11 : instant profile1  0x12 : instant profile2  0x13 : instant profile3  0x14 : instant profile4  0x15 : instant profile5  0x20 : Profile Cycle  0x21 : Previous Profile  0x22 : Next Profile  0x23 : Brightness Cycle  0x24 : Brightness + (25%)  0x25 : Brightness – (25%)  0x26 : Effect Cycle  0x27 : Previous Effect  0x28 : Next Effect | | NULL | | NULL | | NULL | |
| 0xFF : Default | | 0x00 | | NULL | | NULL | | NULL | |

**Appendix A. Key Table**

**0x001~0x0EF**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Key Name** | **Key Location** | | **Macro Data**  **byKeyType** | | **Macro Data**  **byDataIndex** | |
| Default Key | 255 (0xFF) | | 0xFF | | 0x00 | |
| Disable Key | 0 (0x00) | | 0x0b | | 0x00 | |
| System Power | 128 | | 0x0A : ACPI | | 0x01 | |
| System Sleep | 129 | | 0x0A : ACPI | | 0x02 | |
| System Wake | 130 | | 0x0A : ACPI | | 0x03 | |
| a A | 31 | | 0x01 : Keyboard | | 31 | |
| b B | 50 | | 0x01 : Keyboard | | 50 | |
| c C | 48 | | 0x01 : Keyboard | | 48 | |
| d D | 33 | | 0x01 : Keyboard | | 33 | |
| e E | 19 | | 0x01 : Keyboard | | 19 | |
| f F | 34 | | 0x01 : Keyboard | | 34 | |
| g G | 35 | | 0x01 : Keyboard | | 35 | |
| h H | 36 | | 0x01 : Keyboard | | 36 | |
| i I | 24 | | 0x01 : Keyboard | | 24 | |
| j J | 37 | | 0x01 : Keyboard | | 37 | |
| k K | 38 | | 0x01 : Keyboard | | 38 | |
| l L | 39 | | 0x01 : Keyboard | | 39 | |
| m M | 52 | | 0x01 : Keyboard | | 52 | |
| n N | 51 | | 0x01 : Keyboard | | 51 | |
| o O | 25 | | 0x01 : Keyboard | | 25 | |
| p P | 26 | | 0x01 : Keyboard | | 26 | |
| q Q | 17 | | 0x01 : Keyboard | | 17 | |
| r R | 20 | | 0x01 : Keyboard | | 20 | |
| s S | 32 | | 0x01 : Keyboard | | 32 | |
| t T | 21 | | 0x01 : Keyboard | | 21 | |
| u U | 23 | | 0x01 : Keyboard | | 23 | |
| v V | 49 | | 0x01 : Keyboard | | 49 | |
| w W | 18 | | 0x01 : Keyboard | | 18 | |
| x X | 47 | | 0x01 : Keyboard | | 47 | |
| y Y | 22 | | 0x01 : Keyboard | | 22 | |
| z Z | 46 | | 0x01 : Keyboard | | 46 | |
| 1 ! | 2 | | 0x01 : Keyboard | | 2 | |
| 2 @ | 3 | | 0x01 : Keyboard | | 3 | |
| 3 # | 4 | | 0x01 : Keyboard | | 4 | |
| 4 $ | 5 | | 0x01 : Keyboard | | 5 | |
| 5 % | 6 | | 0x01 : Keyboard | | 6 | |
| 6 ^ | 7 | | 0x01 : Keyboard | | 7 | |
| 7 & | 8 | | 0x01 : Keyboard | | 8 | |
| 8 \* | 9 | | 0x01 : Keyboard | | 9 | |
| 9 ( | 10 | | 0x01 : Keyboard | | 10 | |
| 0 ) | 11 | | 0x01 : Keyboard | | 11 | |
| Return | 43 | | 0x01 : Keyboard | | 43 | |
| Escape | 110 | | 0x01 : Keyboard | | 110 | |
| Backspace | 15 | | 0x01 : Keyboard | | 15 | |
| Tab | 16 | | 0x01 : Keyboard | | 16 | |
| Space | 61 | | 0x01 : Keyboard | | 61 | |
| - \_ | 12 | | 0x01 : Keyboard | | 12 | |
| = + | 13 | | 0x01 : Keyboard | | 13 | |
| [ { | 27 | | 0x01 : Keyboard | | 27 | |
| ] } | 28 | | 0x01 : Keyboard | | 28 | |
| \ | | 29 | | 0x01 : Keyboard | | 29 | |
| \ | (Note 1) | 42 | | 0x01 : Keyboard | | 42 | |
| ; : | 40 | | 0x01 : Keyboard | | 40 | |
| ' " | 41 | | 0x01 : Keyboard | | 41 | |
| ` ~ | 1 | | 0x01 : Keyboard | | 1 | |
| , < | 53 | | 0x01 : Keyboard | | 53 | |
| . > | 54 | | 0x01 : Keyboard | | 54 | |
| / ? | 55 | | 0x01 : Keyboard | | 55 | |
| Caps Lock | 30 | | 0x01 : Keyboard | | 30 | |
| F1 | 112 | | 0x01 : Keyboard | | 112 | |
| F2 | 113 | | 0x01 : Keyboard | | 113 | |
| F3 | 114 | | 0x01 : Keyboard | | 114 | |
| F4 | 115 | | 0x01 : Keyboard | | 115 | |
| F5 | 116 | | 0x01 : Keyboard | | 116 | |
| F6 | 117 | | 0x01 : Keyboard | | 117 | |
| F7 | 118 | | 0x01 : Keyboard | | 118 | |
| F8 | 119 | | 0x01 : Keyboard | | 119 | |
| F9 | 120 | | 0x01 : Keyboard | | 120 | |
| F10 | 121 | | 0x01 : Keyboard | | 121 | |
| F11 | 122 | | 0x01 : Keyboard | | 122 | |
| F12 | 123 | | 0x01 : Keyboard | | 123 | |
| Print Screen | 124 | | 0x01 : Keyboard | | 124 | |
| Scroll Lock | 125 | | 0x01 : Keyboard | | 125 | |
| Pause | 126 | | 0x01 : Keyboard | | 126 | |
| Insert | 75 | | 0x01 : Keyboard | | 75 | |
| Home | 80 | | 0x01 : Keyboard | | 80 | |
| Page Up | 85 | | 0x01 : Keyboard | | 85 | |
| Delete | 76 | | 0x01 : Keyboard | | 76 | |
| End | 81 | | 0x01 : Keyboard | | 81 | |
| Page Down | 86 | | 0x01 : Keyboard | | 86 | |
| Right Arrow | 89 | | 0x01 : Keyboard | | 89 | |
| Left Arrow | 79 | | 0x01 : Keyboard | | 79 | |
| Down Arrow | 84 | | 0x01 : Keyboard | | 84 | |
| Up Arrow | 83 | | 0x01 : Keyboard | | 83 | |
| Num Lock | 90 | | 0x01 : Keyboard | | 90 | |
| Keypad / | 95 | | 0x01 : Keyboard | | 95 | |
| Keypad \* | 100 | | 0x01 : Keyboard | | 100 | |
| Keypad - | 105 | | 0x01 : Keyboard | | 105 | |
| Keypad + | 106 | | 0x01 : Keyboard | | 106 | |
| Keypad Enter | 108 | | 0x01 : Keyboard | | 108 | |
| Keypad 1 End | 93 | | 0x01 : Keyboard | | 93 | |
| Keypad 2 Down | 98 | | 0x01 : Keyboard | | 98 | |
| Keypad 3 PageDn | 103 | | 0x01 : Keyboard | | 103 | |
| Keypad 4 Left | 92 | | 0x01 : Keyboard | | 92 | |
| Keypad 5 | 97 | | 0x01 : Keyboard | | 97 | |
| Keypad 6 Right | 102 | | 0x01 : Keyboard | | 102 | |
| Keypad 7 Home | 91 | | 0x01 : Keyboard | | 91 | |
| Keypad 8 Up | 96 | | 0x01 : Keyboard | | 96 | |
| Keypad 9 PageUp | 101 | | 0x01 : Keyboard | | 101 | |
| Keypad 0 Insert | 99 | | 0x01 : Keyboard | | 99 | |
| Keypad . Delete | 104 | | 0x01 : Keyboard | | 104 | |
| \ | (Note 1) | 45 | | 0x01 : Keyboard | | 45 | |
| App | 65 | | 0x01 : Keyboard | | 65 | |
| Keypad , (Brazilian Keypad .) | 107 | | 0x01 : Keyboard | | 107 | |
| Keyboard Intl'2 かたかな ひらがな ローマ字 (Katakana/Hiragana) | 133 | | 0x01 : Keyboard | | 133 | |
| Keyboard Int'l 4 前候補 変換 (次候補) 全候補 (Henkan) | 132 | | 0x01 : Keyboard | | 132 | |
| Keyboard Int'l 5 無変換 (Muhenkan) | 131 | | 0x01 : Keyboard | | 131 | |
| Keyboard Lang 1 한/옝 (Hanguel/English) | 151 | | 0x01 : Keyboard | | 151 | |
| Keyboard Lang 2 한자 (Hanja) | 150 | | 0x01 : Keyboard | | 150 | |
| Left Control | 58 | | 0x01 : Keyboard | | 58 | |
| Left Shift | 44 | | 0x01 : Keyboard | | 44 | |
| Left Alt | 60 | | 0x01 : Keyboard | | 60 | |
| Left GUI | 59 | | 0x01 : Keyboard | | 59 | |
| Right Control | 64 | | 0x01 : Keyboard | | 64 | |
| Right Shift | 57 | | 0x01 : Keyboard | | 57 | |
| Right Alt | 62 | | 0x01 : Keyboard | | 62 | |
| Right GUI | 63 | | 0x01 : Keyboard | | 63 | |
| FN | 154 | |  | |  | |
| WinLock | 155 | |  | |  | |
| Brightness Cycle | 156 | | 0x0C: Function Key | | 0x23 | |
| MR | 158 | |  | |  | |
| M1 | 160 | | 0x0C: Function Key | | 0x01 | |
| M2 | 161 | | 0x0C: Function Key | | 0x02 | |
| M3 | 162 | | 0x0C: Function Key | | 0x03 | |
| M4 | 163 | | 0x0C: Function Key | | 0x04 | |
| M5 | 164 | | 0x0C: Function Key | | 0x05 | |
| M6 | 165 | |  | |  | |
| M7 | 166 | |  | |  | |
| M8 | 167 | |  | |  | |
| M9 | 168 | |  | |  | |
| M10 | 169 | |  | |  | |
| G1 | 170 | |  | |  | |
| G2 | 171 | |  | |  | |
| G3 | 172 | |  | |  | |
| G4 | 173 | |  | |  | |
| G5 | 174 | |  | |  | |
| G6 | 175 | |  | |  | |
| G7 | 176 | |  | |  | |
| G8 | 177 | |  | |  | |
| G9 | 178 | |  | |  | |
| G10 | 179 | |  | |  | |
| Profile Cycle | 210 | | 0x0C: Function Key | | 0x20 | |
| Previous Profile | 211 | | 0x0C: Function Key | | 0x21 | |
| Next Profile | 212 | | 0x0C: Function Key | | 0x22 | |
| Brightness + | 213 | | 0x0C: Function Key | | 0x24 | |
| Brightness - | 214 | | 0x0C: Function Key | | 0x25 | |
| Effect Cycle | 215 | | 0x0C: Function Key | | 0x26 | |
| Previous Effect | 216 | | 0x0C: Function Key | | 0x27 | |
| Next Effect | 217 | | 0x0C: Function Key | | 0x28 | |
| Scan Next Track | 180 | | 0x03 : Multimedia | | 0x06 | |
| Scan Previous Track | 181 | | 0x03 : Multimedia | | 0x05 | |
| Stop | 182 | | 0x03 : Multimedia | | 0x07 | |
| Play/ Pause | 183 | | 0x03 : Multimedia | | 0x04 | |
| Mute | 184 | | 0x03 : Multimedia | | 0x03 | |
| Volume Up | 187 | | 0x03 : Multimedia | | 0x01 | |
| Volume Down | 188 | | 0x03 : Multimedia | | 0x02 | |
| Media Select | 193 | | 0x03 : Multimedia | | 0x08 | |
| Mail | 194 | | 0x03 : Multimedia | | 0x09 | |
| Calculator | 195 | | 0x03 : Multimedia | | 0x0A | |
| My Computer | 196 | | 0x03 : Multimedia | | 0x0B | |
| WWW Search | 197 | | 0x03 : Multimedia | | 0x0C | |
| WWW Home | 198 | | 0x03 : Multimedia | | 0x0D | |
| WWW Back | 199 | | 0x03 : Multimedia | | 0x0E | |
| WWW Forward | 200 | | 0x03 : Multimedia | | 0x0F | |
| WWW Stop | 201 | | 0x03 : Multimedia | | 0x10 | |
| WWW Refresh | 202 | | 0x03 : Multimedia | | 0x11 | |
| WWW Favorites | 203 | | 0x03 : Multimedia | | 0x12 | |
| G11 | 220 | |  | |  | |
| G12 | 221 | |  | |  | |
| F13 | | 230 | | 0x01 : Keyboard | | 230 |
| F14 | | 231 | | 0x01 : Keyboard | | 231 |
| F15 | | 232 | | 0x01 : Keyboard | | 232 |
| F16 | | 233 | | 0x01 : Keyboard | | 233 |
| F17 | | 234 | | 0x01 : Keyboard | | 234 |
| F18 | | 235 | | 0x01 : Keyboard | | 235 |
| F19 | | 236 | | 0x01 : Keyboard | | 236 |
| F20 | | 237 | | 0x01 : Keyboard | | 237 |
| F21 | | 238 | | 0x01 : Keyboard | | 238 |
| F22 | | 239 | | 0x01 : Keyboard | | 239 |
| F23 | | 240 | | 0x01 : Keyboard | | 240 |
| F24 | | 241 | | 0x01 : Keyboard | | 241 |

**Extend Function**

|  |  |  |  |
| --- | --- | --- | --- |
| **Definition** | **Hex** | **Explanation** | **Note** |
| MOUSE\_MOVE\_TOPLEFT | 0x120 | Move to the upper left | Mouse XY movement |
| MOUSE\_MOVE\_TOP | 0x121 | Move up | Mouse XY movement |
| MOUSE\_MOVE\_TOPRIGHT | 0x122 | Move to the upper right | Mouse XY movement |
| MOUSE\_MOVE\_RIGHT | 0x123 | Move to the right | Mouse XY movement |
| MOUSE\_MOVE\_BOTTOMRIGHT | 0x124 | Move right | Mouse XY movement |
| MOUSE\_MOVE\_BOTTOM | 0x125 | Move down | Mouse XY movement |
| MOUSE\_MOVE\_BOTTOMLEFT | 0x126 | Move to the lower left | Mouse XY movement |
| MOUSE\_MOVE\_LEFT | 0x127 | Move left | Mouse XY movement |
| MOUSE\_MOVE\_X\_AXIS | 0x128 | Move X coordinate (do not drive the mouse, only return X coordinate to AP) | Notify SW to call “SetMouseMove” |
| MOUSE\_MOVE\_Y\_AXIS | 0x129 | Move Y coordinate (do not drive the mouse, only return Y coordinate to AP) | Notify SW to call “SetMouseMove” |
| MOUSE\_MOVE\_ROLLUP | 0x130 | Wheel up | Scroll wheel |
| MOUSE\_MOVE\_ROLLDOWN | 0x131 | Wheel down | Scroll wheel |
| MOUSE\_CLICK\_LEFT | 0x101 | Left mouse button |  |
| MOUSE\_CLICK\_RIGHT | 0x102 | Right mouse button |  |
| MOUSE\_CLICK\_MID | 0x103 | Middle mouse button |  |
| MOUSE\_CLICK\_K4 | 0x104 | Mouse button 4 |  |
| MOUSE\_CLICK\_K5 | 0x105 | Mouse button 5 |  |
| INSTANT\_M1 | 0x141 | Instantly switch to M1 |  |
| INSTANT\_M2 | 0x142 | Instantly switch to M2 |  |
| INSTANT\_M3 | 0x143 | Instantly switch to M3 |  |
| INSTANT\_M4 | 0x144 | Instantly switch to M4 |  |
| INSTANT\_M5 | 0x145 | Instantly switch to M5 |  |