

## Hidden Key Sequence for ProtoLink Keyboard

The ProtoLink custom keyboard can be programmed to provide a Supervisor layer, which is accessed using a hidden key sequence. This function can be used instead of a keylock which is common on POS equipment.

Keyboard layer 128, shown below, is pre-programmed in firmware and is used to select the "Security Code" which switches to the supervisor layer.

Row	Column															
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	a1	b1	c1	d1	e1	f1	g1	h1	i1	j1	k1	l1	m1	n1	o1	p1
2	a2	b2	c2	d2	e2	f2	g2	h2	i2	j2	k2	l2	m2	n2	o2	p2
3	a3	b3	c3	d3	e3	f3	g3	h3	i3	j3	k3	l3	m3	n3	o3	p3
4	a4	b4	c4	d4	e4	f4	g4	h4	i4	j4	k4	l4	m4	n4	o4	p4
5	a5	b5	c5	d5	e5	f5	g5	h5	i5	j5	k5	l5	m5	n5	o5	p5
6	a6	b6	c6	d6	e6	f6	g6	h6	i6	j6	k6	l6	m6	n6	o6	p6
7	a7	b7	c7	d7	e7	f7	g7	h7	i7	j7	k7	l7	m7	n7	o7	p7
8	a8	b8	c8	d8	e8	f8	g8	h8	i8	j8	k8	l8	m8	n8	o8	p8

The explanation for the Security Access is built around the configuration file (INI) created by the S143 programming utility.

The strings that are programmed into the keys on layer 128 represent the row / column co-ordinates of the keys. One key or upto 16 keys can be used in the "Security Code", the example below uses 3 keys; m5, n6 and o7. The resultant string required in the INI file is "m5n6o7".

**; Created by S143 vers 1.5 - UMD ProtoLink Programming Utility**  
**; Date: 29/5/97**  
**; Security Access**

The character filter "c4" is programmed to check the data stream for the required sequence, in this case "m5n6o7", "c4" then outputs commands to switch to the keyboard layer which has been designated as the "Supervisor" layer, in this case layer 2. In S143 the string is entered directly into the work area.

**[CharFilters]**

**c4InStrOutStrAddr=0200h**

**c4InStr="m5n6o7"**

the security code

**c4OutStr=<CTL-B> "KL 2\r" <CTL-C>**

commands to switch to layer 2

**[ConversionDevices]**

**KbdLayerAddr=0210h**

**BaseKbdLayerNo=01h**

**[KbdLayer1]**

operator layer

**ID=1**

**NoKeys=128**

**LEDNo=1**

The key values in this part are programmed using the S143 utility, in "Edit Key Definitions". At least 2 layers will be required, one for the operator layer and one for the supervisor layer. It is also useful to use the LED indicators to show what layer is current.

A key is assigned as the "System Function", in this example the key in the top left hand corner (a1) is used. The key is pressed and held (like a "shift key") while the security sequence is entered, then released. When the "System Function" key is pressed, layer 128 is selected and the output from the keypad is passed to the character filter "c4". When the key is released and the wrong sequence or nothing has been pressed, layer 128 is deselected and the output from keypad is passed back to the logical device "L0". If the right sequence has been entered, the "supervisor" layer is then selected, in this example layer 2, layer 128 is deselected and the output from keypad is passed back to the logical device "L0".

**a1m=<CTL-B> "KS 128\rLI K1 c4\r" <CTL-C>**

commands to select layer 128 and link keypad to c4

**a1b= " "<CTL-B> "KD\rLI K1 L0\r" <CTL-C>**

a "space" is entered to flush the "c4" buffer and commands to deselect current layer and link keypad to L0

**c1m="Operator Layer\r"**

The key c1 has the string "Operator Layer" as an example.

**[KbdLayer2]**

supervisor layer

**ID=2**

**NoKeys=128**

**LEDNo=2**

**a1m=<CTL-B> "KU\r" <CTL-C>**

command to deselect current layer.

**c1m="Supervisor Layer"**

The key c1 has the string "Operator Layer" as an example.