

Instructions to Translate the USB keyboard code from one Teensy to another

A keyboard routine written for the obsolete Teensy LC or 3.2 can be modified for a different Teensy. As an example, the Dell Inspiron 1525 original code named `Dell_1525_Keyboard.ino` for a Teensy LC is at my [repo](#). To convert the code to a Teensy 4.0, 4.1, or 2.0++, two lines in the code must be changed that list the row and column I/O numbers. Use the LC I/O translation table shown on the next page to translate the row and column I/O's to your desired Teensy. Example: I/O pin 26 in the Teensy LC table converts to I/O pin 28 for a Teensy 4.0, pin 25 for a Teensy 4.1, and pin 40 for a Teensy 2.0++.

Original Teensy LC code for a Dell Inspiron 1525

```
int Row_IO[rows_max] = {23,0,22,1,24,2,21,3,25,4,20,5,19,6,18,7,17}; // Teensy LC I/O's for rows
int Col_IO[cols_max] = {8,16,9,15,10,14,11,26}; // Teensy LC I/O numbers for columns
```

Modified Dell Inspiron 1525 code for Teensy 4.0

```
int Row_IO[rows_max] = {23,0,22,1,21,2,20,3,19,4,18,5,17,6,29,7,31}; // Teensy 4.0 I/O's for rows
int Col_IO[cols_max] = {8,33,9,32,10,30,11,28}; // Teensy 4.0 I/O numbers for columns
```

You can see these changes in file `Dell_1525_Keyboard_4p0.ino` at my [repo](#).

Modified Dell Inspiron 1525 code for Teensy 4.1

```
int Row_IO[rows_max] = {23,0,22,1,21,2,20,3,19,4,18,5,17,6,29,7,31}; // Teensy 4.1 I/O's for rows
int Col_IO[cols_max] = {8,14,9,10,11,12,24,25}; // Teensy 4.1 I/O numbers for columns
```

You can see these changes in the file `Dell_1525_Keyboard_4p1.ino` at my [repo](#).

Modified Dell Inspiron 1525 code for Teensy 2.0++

```
unsigned int Row_IO[rows_max] = {27,26,0,25,1,24,2,23,3,22,4,21,5,20,28,19,7}; // Teensy 2.0++ rows
unsigned int Col_IO[cols_max] = {18,8,9,38,10,39,11,40}; // Teensy 2.0++ I/O numbers for columns
```

In addition, the onboard LED is at I/O 6 instead of 13 so modify the `CAPS_LED` definition as follows:

```
#define CAPS_LED 6 // Teensy LED shows Caps-Lock
```

The Teensy 2.0++ will only compile if all integers are unsigned integers so search for all instances of "int" and replace with "unsigned int".

You can see these changes in the file `Dell_1525_Keyboard_2pp.ino` at my [repo](#).

I/O pin translation table for a Teensy LC to a Teensy 4.0, Teensy 4.1, or Teensy 2.0++

Teensy LC I/O #	Teensy 4.0 I/O #	Teensy 4.1 I/O #	Teensy 2.0++ I/O #
0	0	0	26
1	1	1	25
2	2	2	24
3	3	3	23
4	4	4	22
5	5	5	21
6	6	6	20
7	7	7	19
8	8	8	18
9	9	9	9
10	10	11	10
11	11	24	11
12	12	26	12
13	13	13	6
14	30	12	39
15	32	10	38
16	33	14	8
17	31	15	7
18	29	16	28
19	17	17	5
20	18	18	4
21	20	20	2
22	22	22	0
23	23	23	27
24	21	21	1
25	19	19	3
26	28	25	40

A keyboard routine written for the Teensy 3.2 can be modified for a different Teensy using the same procedure as above and the I/O translation table shown below.

I/O pin translation table for a Teensy 3.2 to a Teensy 4.0, Teensy 4.1, or Teensy 2.0++

Teensy 3.2 I/O #	Teensy 4.0 I/O #	Teensy 4.1 I/O #	Teensy 2.0++ I/O #
0	0	0	26
1	1	1	25
2	2	2	24
3	3	3	23
4	4	4	22
5	5	5	21
6	6	6	20
7	7	7	19
8	8	8	18
9	9	9	9
10	10	11	10
11	11	24	11
12	12	26	12
13	13	41	16
14	14	33	44
15	15	32	15
16	16	31	43
17	17	17	5
18	18	18	4
19	19	19	3
20	20	20	2
21	21	21	1
22	22	22	0
23	23	23	27

24	29	16	28
25	31	15	7
26	32	10	38
27	30	12	39
28	28	25	40
29	24	30	14
30	25	29	42
31	26	28	13
32	27	27	41
33	33	14	8