Multiplexer

MUX_COMMON_1 — MUX_COMMON
MUX_S0 — MUX_S0
MUX_S1 — MUX_S1
MUX_S2 — MUX_S2
MUX_S3 — MUX_S3

BRI?
From ModularDeck

MAX7219_LOAD	1	13	MAX7219_DIN
SR_IN_LATCH	2	14	MUX_COMMON_1
SR_IN_DATA	3	15	MUX_COMMON_3
SPI_CLK	4	16	MUX_COMMON_4
BC_0	5	17	MUX_S0
BC_1	6	18	MUX_S1
BC_2	7	19	MUX_S1
BC_3	8	20	MUX_S2
BC_4	9	21	MUX_S3
BC_5	10	22	GND
BC_6	11	23	+3.3V
BC_7	12	24	+5V

BRO?
To Any Breakout Board

MAX7219_LOAD	1	13	MAX7219_DOUT
SR_IN_LATCH	2	14	MUX_COMMON_2
SR_DAISY_DATA	3	15	MUX_COMMON_3
SPI_CLK	4	16	MUX_COMMON_4
BC_0	5	17	
BC_1	6	18	MUX_S0
BC_2	7	19	MUX_S1
BC_3	8	20	MUX_S2
BC_4	9	21	MUX_S3
BC_5	10	22	GND
BC_6	11	23	+3.3V
BC_7	12	24	+5V

KP1
To Keypad 1

BR_0	1	7	BC_0
LED_ROW_0	2	8	LED_COLUMN_0
BR_1	3	9	BC_1
LED_ROW_1	4	10	LED_COLUMN_1
BR_2	5	11	BC_2
LED_ROW_2	6	12	LED_COLUMN_2

KP2
To Keypad 2

BR_0	1	7	BC_3
LED_ROW_0	2	8	LED_COLUMN_3
BR_1	3	9	BC_4
LED_ROW_1	4	10	LED_COLUMN_4
BR_2	5	11	BC_5
LED_ROW_2	6	12	LED_COLUMN_5

KP3
To Keypad 3

BR_3	1	7	BC_0
LED_ROW_3	2	8	LED_COLUMN_0
BR_4	3	9	BC_1
LED_ROW_4	4	10	LED_COLUMN_1
BR_5	5	11	BC_2
LED_ROW_5	6	12	LED_COLUMN_2

KP4
To Keypad 4

BR_3	1	7	BC_3
LED_ROW_3	2	8	LED_COLUMN_3
BR_4	3	9	BC_4
LED_ROW_4	4	10	LED_COLUMN_4
BR_5	5	11	BC_5
LED_ROW_5	6	12	LED_COLUMN_5

KP5
To Keypad 5

BR_6	1	5	BC_0
LED_ROW_6	2	6	LED_COLUMN_0
BR_7	3	7	BC_1
LED_ROW_7	4	8	LED_COLUMN_1

KP6
To Keypad 6

BR_6	1	5	BC_2
LED_ROW_6	2	6	LED_COLUMN_2
BR_7	3	7	BC_3
LED_ROW_7	4	8	LED_COLUMN_3

KP6
To Keypad 6

BR_6	1	5	BC_4
LED_ROW_6	2	6	LED_COLUMN_4
BR_7	3	7	BC_5
LED_ROW_7	4	8	LED_COLUMN_5

LED_COLUMN_6 / BC_6

OH?

LED_ROW_1	1	2
LED_ROW_2	3	4
LED_ROW_3	5	6
LED_ROW_4	7	8
LED_ROW_5	9	10
LED_ROW_6	11	12
LED_ROW_7	13	14
LED_ROW_8	15	16

IH?

1	2	D?	BR_0
3	4	D?	BR_1
5	6	D?	BR_2
7	8	D?	BR_3
9	10	D?	BR_4
11	12	D?	BR_5
13	14	D?	BR_6
15	16	D?	BR_7

LED_COLUMN_7 / BC_7

OH?

LED_ROW_1	1	2
LED_ROW_2	3	4
LED_ROW_3	5	6
LED_ROW_4	7	8
LED_ROW_5	9	10
LED_ROW_6	11	12
LED_ROW_7	13	14
LED_ROW_8	15	16

IH?

1	2	D?	BR_0
3	4	D?	BR_1
5	6	D?	BR_2
7	8	D?	BR_3
9	10	D?	BR_4
11	12	D?	BR_5
13	14	D?	BR_6
15	16	D?	BR_7

LED Control

C? 100n +5V

C? 100n +3.3V

C? 100n +5V

GND

U?
TXB0104PW

OE	8		
MAX7219_DIN	2	A1	B1	13
MAX7219_LOAD	3	A2	B2	12
SPI_CLK	4	A3	B3	11
MAX7219_DOUT	5	A4	B4	10
		GND	7	

VCCA 1   VCCB 14

U?
MAX7219

V+	19	14	SEG_A	LED_ROW_0
GND	4	16	SEG_B	LED_ROW_1
		20	SEG_C	LED_ROW_2
ISET	18	23	SEG_D	LED_ROW_3
		21	SEG_E	LED_ROW_4
DIN	1	15	SEG_F	LED_ROW_5
LOAD	12	17	SEG_G	LED_ROW_6
CLK	13	22	SEG_DP	LED_ROW_7
DOUT	24	2	DIG_0	LED_COLUMN_0
		11	DIG_1	LED_COLUMN_1
		6	DIG_2	LED_COLUMN_2
		7	DIG_3	LED_COLUMN_3
		3	DIG_4	LED_COLUMN_4
		10	DIG_5	LED_COLUMN_5
		5	DIG_6	LED_COLUMN_6
		8	DIG_7	LED_COLUMN_7

R? 10k +5V

Button Control

C? 100n +3.3V

U?
74HC165

	16	VCC	D0	11	BR_3
GND	8	GND	D1	12	BR_2
	15	CE	D2	13	BR_1
SR_IN_LATCH	1	PL	D3	14	BR_0
SPI_CLK	2	CP	D4	3	BR_4
SR_IN_DATA	9	Q7	D5	4	BR_5
	7	Q7	D6	5	BR_6
SR_DAISY_DATA	10	DS	D7	6	BR_7

+3.3V

BR_7	R?	4.7k
BR_6	R?	4.7k
BR_5	R?	4.7k
BR_4	R?	4.7k
BR_3	R?	4.7k
BR_2	R?	4.7k
BR_1	R?	4.7k
BR_0	R?	4.7k

C?
100n
+3.3VADC
GND

U?
74HC4067

24 VCC
12 GND
15 E

MUX_S0D 10 S0
MUX_S1D 11 S1
MUX_S2D 14 S2
MUX_S3D 13 S3

MUX_COMMOND 1 COM

Y0 9 A_IN_0
Y1 8 A_IN_1
Y2 7 A_IN_2
Y3 6 A_IN_3
Y4 5 A_IN_4
Y5 4 A_IN_5
Y6 3 A_IN_6
Y7 2 A_IN_7
Y8 23 A_IN_8
Y9 22 A_IN_9
Y10 21 A_IN_10
Y11 20 A_IN_11
Y12 19 A_IN_12
Y13 18 A_IN_13
Y14 17 A_IN_14
Y15 16 A_IN_15

GND
1
2
3
4
5
6
7
8
AH?A
3x08

GND
1
2
3
4
5
6
7
8
AH?A
3x08

A_IN_15 9
A_IN_14 10
A_IN_13 11
A_IN_12 12
A_IN_11 13
A_IN_10 14
A_IN_9 15
A_IN_8 16
AH?B
3x08

A_IN_0 9
A_IN_1 10
A_IN_2 11
A_IN_3 12
A_IN_4 13
A_IN_5 14
A_IN_6 15
A_IN_7 16
AH?B
3x08

+3.3VADC 17
18
19
20
21
22
23
24
AH?C
3x08

+3.3VADC 17
18
19
20
21
22
23
24
AH?C
3x08