DIN6DOUT4 module

A combination of DIN and DOUT on the same PCB

Schematic

Please refer to the uCapps pages for DIN and DOUT.

Notice that DOUT 1 and 2 are connected through UDN2981 source driver chips. When a voltage (e.g. 12V) is supplied to J13, the DOUTs will be shunted to this voltage; no inversion is needed. Resistors R1-16 provide current limiting.

If normal DOUT behaviour is desired for DOUT 1/2, simply bridge a resistor from the resistor pad closest to J11/J12 directly across to pins 1-8 of the unmounted IC11/12

BOM v1.0

Type	Part	Value	Device	Package
Caps	C1	100n	C1206	C1206
	C2	100n	C1206	C1206
	C3	100n	C1206	C1206
	C4	100n	C1206	C1206
	C5	100n	C1206	C1206
	C6	100n	C1206	C1206
	C7	100n	C1206	C1206
	C8	100n	C1206	C1206
	C9	100n	C1206	C1206
	C10	100n	C1206	C1206
	C11	10-100uF	E2,5-6E	E2,5-6E
ICs	IC1	74HC165	74HC165D	SO16
	IC2	74HC165	74HC165D	SO16
	IC3	74HC165	74HC165D	SO16
	IC4	74HC165	74HC165D	SO16
	IC5	74HC165	74HC165D	SO16
	IC6	74HC165	74HC165D	SO16
	IC7	74HC595N	74HC595N	DIL16
	IC8	74HC595N	74HC595N	DIL16
	IC9	74HC595N	74HC595N	DIL16
	IC10	74HC595N	74HC595N	DIL16
	IC11	UDN2981A	UDN2981A	DIL18
	IC12	UDN2981A	UDN2981A	DIL18
Headers	J1	DIN1	PINHD-2X54WALL	PAK100/2500-10

Type	Part	Value	Device	Package
	J2	DIN2	PINHD-2X54WALL	PAK100/2500-10
	J3	DIN3	PINHD-2X54WALL	PAK100/2500-10
	J4	DIN4	PINHD-2X54WALL	PAK100/2500-10
	J5	DIN5	PINHD-2X54WALL	PAK100/2500-10
	J6	DIN6	PINHD-2X5STACKED	DIL-SOCKET_STACK
	J7	DOUT3	PINHD-2X54WALL	PAK100/2500-10
	J10	DOUT4	PINHD-2X5STACKED	DIL-SOCKET_STACK
	J11	DOUT1	PINHD-2X54WALL	PAK100/2500-10
	J12	DOUT2	PINHD-2X54WALL	PAK100/2500-10
	J13	+12V	22-23-2031	22-23-2031
	J89	SRIO	IN	PINHD-2X54WALL
	J89A	SRIO	OUT	PINHD-2X54WALL
Resistors	R1	1k	0207/2V	RESISTOR,
	R2	1k	0207/2V	RESISTOR,
	R3	1k	0207/2V	RESISTOR,
	R4	1k	0207/2V	RESISTOR,
	R5	1k	0207/2V	RESISTOR,
	R6	1k	0207/2V	RESISTOR,
	R7	1k	0207/2V	RESISTOR,
	R8	1k	0207/2V	RESISTOR,
	R9	1k	0207/2V	RESISTOR,
	R10	1k	0207/2V	RESISTOR,
	R11	1k	0207/2V	RESISTOR,
	R12	1k	0207/2V	RESISTOR,
	R13	1k	0207/2V	RESISTOR,
	R14	1k	0207/2V	RESISTOR,
	R15	1k	0207/2V	RESISTOR,
	R16	1k	0207/2V	RESISTOR,
	R17	~220R	0207/10	RESISTOR,
	R18	~220R	0207/10	RESISTOR,
	R19	~220R	0207/10	RESISTOR,
	R20	~220R	0207/10	RESISTOR,
	R21	~220R	0207/10	RESISTOR,
	R22	~220R	0207/10	RESISTOR,
	R23	~220R	0207/10	RESISTOR,
	R24	~220R	0207/10	RESISTOR,
	R25	~220R	0207/10	RESISTOR,
	R26	~220R	0207/10	RESISTOR,
	R27	~220R	0207/10	RESISTOR,
	R28	~220R	0207/10	RESISTOR,
	R29	~220R	0207/10	RESISTOR,
	R30	~220R	0207/10	RESISTOR,
	R31	~220R	0207/10	RESISTOR,
	R32	~220R	0207/10	RESISTOR,
Resistor networks	RN1	10k	652-4816P-T2LF-10K	BOURNS

Type	Part	Value	Device	Package
	RN2	10k	652-4816P-T2LF-10K	BOURNS
	RN3	10k	652-4816P-T2LF-10K	BOURNS
	RN4	10k	652-4816P-T2LF-10K	BOURNS
	RN5	10k	652-4816P-T2LF-10K	BOURNS
	RN6	10k	652-4816P-T2LF-10K	BOURNS

Versions

v1.0: first release.

Assembly

The 1206 caps and SMT parts should be soldered first. Note the orientation of ICs! In general they will have pin 1/16 nearest the decoupling cap. Pin 1 for RNs is marked with a circle, important as these chips are also polarised. Some headers are marked as “socket this side.” To use the module normally, install the headers on the rear side.

Note the instructions for DOUT1/2. You either need ICs 11/12 and resistors vertically mounted or spanning the outermost pads in place of IC11/12.

Interconnection to Core

J89 connects to J89. J89A is for cascading further modules.

License

Currently the design is © 2018 antilog devices with all rights reserved; all documentation is CC BY-NC-SA 3.0.

From:
https://wiki.midibox.org/ - **MIDIbox**

Permanent link:
https://wiki.midibox.org/doku.php?id=mbcv_dindout&rev=1520455290

Last update: **2018/03/07 20:41**