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#####
# MIDIbox Ju Ctrl (ROLAND ALPHA JUNO CONTROL PANEL) #
# MBHP DIN | DOUT #
# V1.2 | 02/2012 | by lemonhorse@subfrequenz.net #
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**MBHP DIN TABLE (15 x BTN, 30 x ENC)**

Shift Register	SR number	Pin Name	Pin Number	Hex number	BTN / ENC NAME
<b>MBHP DIN X4 I</b>					
first J4	1	D0	0	0x00	ENC MENU
first J4	1	D1	1	0x01	ENC MENU
first J4	1	D2	2	0x02	ENC VALUE
first J4	1	D3	3	0x03	ENC VALUE
first J3	1	D4	4	0x04	ENC PRG./ SOUNDBANK
first J3	1	D5	5	0x05	ENC PRG./ SOUNDBANK
first J3	1	D6	6	0x06	BTN MENU SEL
first J3	1	D7	7	0x07	BTN MENU ESC
second J6	2	D0	8	0x08	BTN MENU EXEC
second J6	2	D1	9	0x09	BTN SEND PARAM.
second J6	2	D2	10	0x0a	BTN PULSE WAVEFORM
second J6	2	D3	11	0x0b	BTN SAW WAVEFORM
second J5	2	D4	12	0x0c	BTN SUB WAVEFORM
second J5	2	D5	13	0x0d	BTN SUB WAVE LEVEL
second J5	2	D6	14	0x0e	BTN NOISE LEVEL
second ...	2	D7	15	0x0f	BTN DCO PITCH RANGE
third	3	D0	16	0x10	BTN DCO ENV PITCH MODE
third	3	D1	17	0x11	BTN PORTA ON/OFF
third	3	D2	18	0x12	BTN VCF ENV MODE
third	3	D3	19	0x13	BTN HPF
third	3	D4	20	0x14	BTN VCA ENV MODE
third	3	D5	21	0x15	BTN CHORUS ON/OFF
third	3	D6	22	0x16	BTN F1
third	3	D7	23	0x17	BTN F2
fourth	4	D0	24	0x18	BTN F3
fourth	4	D1	25	0x19	BTN F4
fourth	4	D2	26	0x1a	BTN F5
fourth	4	D3	27	0x1b	N.C. (RESERVED)
fourth	4	D4	28	0x1c	ENC PW DEPTH WAV3
fourth	4	D5	29	0x1d	ENC PW DEPTH WAV3
fourth	4	D6	30	0x1e	ENC DCO PWM RATE WAV3
fourth	4	D7	31	0x1f	ENC DCO PWM RATE WAV3
<b>MBHP DIN X4 II</b>					
fifth	5	D0	32	0x20	ENC PITCH ENV MOD DEPTH
fifth	5	D1	33	0x21	ENC PITCH ENV MOD DEPTH
fifth	5	D2	34	0x22	ENC PITCH LFO DEPTH
fifth	5	D3	35	0x23	ENC PITCH LFO DEPTH
fifth	5	D4	36	0x24	ENC BENDER PITCH RANGE
fifth	5	D5	37	0x25	ENC BENDER PITCH RANGE
fifth	5	D6	38	0x26	ENC DCO AFTRTCH. SENS.
fifth	5	D7	39	0x27	ENC DCO AFTRTCH. SENS.
sixth	6	D0	40	0x28	ENC PORTA TIME
sixth	6	D1	41	0x29	ENC PORTA TIME
sixth	6	D2	42	0x2A	ENC VOLUME
sixth	6	D3	43	0x2B	ENC VOLUME
sixth	6	D4	44	0x2C	ENC VCF CUTOFF
sixth	6	D5	45	0x2D	ENC VCF CUTOFF
sixth	6	D6	46	0x2E	ENC VCF RESONANCE
sixth	6	D7	47	0x2F	ENC VCF RESONANCE
seventh	7	D0	48	0x30	ENC VCF ENV. MOD. DEPHT
seventh	7	D1	49	0x31	ENC VCF ENV. MOD. DEPHT
seventh	7	D2	50	0x32	ENC VCF LFO DEPTH
seventh	7	D3	51	0x33	ENC VCF LFO DEPTH
seventh	7	D4	52	0x34	ENC VCF KEYB. FOLLOWER
seventh	7	D5	53	0x35	ENC VCF KEYB. FOLLOWER
seventh	7	D6	54	0x36	ENC VCF AFT. DEPTH
seventh	7	D7	55	0x37	ENC VCF AFT. DEPTH

eighth	8	D0	56	0x38	ENC LFO RATE
eighth	8	D1	57	0x39	ENC LFO RATE
eighth	8	D2	58	0x3A	ENC LFO DELAY
eighth	8	D3	59	0x3B	ENC LFO DELAY
eighth	8	D4	60	0x3C	ENC CHORUS RATE
eighth	8	D5	61	0x3D	ENC CHORUS RATE
eighth	8	D6	62	0x3E	ENC ENV L1
eighth	8	D7	63	0x3F	ENC ENV L1
<b>MBHP DIN X4 III</b>					
9th	9	D0	64	0x40	ENC ENV L2
9th	9	D1	65	0x41	ENC ENV L2
9th	9	D2	66	0x42	ENC ENV L3
9th	9	D3	67	0x43	ENC ENV L3
9th	9	D4	68	0x44	ENC KEYB FOLLOWER
9th	9	D5	69	0x45	ENC KEYB FOLLOWER
9th	9	D6	70	0x46	ENC ENV T1
9th	9	D7	71	0x47	ENC ENV T1
10th	10	D0	72	0x48	ENC ENV T2
10th	10	D1	73	0x49	ENC ENV T2
10th	10	D2	74	0x4A	ENC ENV T3
10th	10	D3	75	0x4B	ENC ENV T3
10th	10	D4	76	0x4C	ENC ENV T4
10th	10	D5	77	0x4D	ENC ENV T4
10th	10	D6	78	0x4E	ENC VCA LEVEL
10th	10	D7	79	0x4F	ENC VCA LEVEL
11th	11	D0	80	0x50	ENC VCA AFTERTOUC
11th	11	D1	81	0x51	ENC VCA AFTERTOUC
11th	11	D2	82	0x52	-
11th	11	D3	83	0x53	-
11th	11	D4	84	0x54	-
11th	11	D5	85	0x55	-
11th	11	D6	86	0x56	-
11th	11	D7	87	0x57	-
12th	12	D0	88	0x58	-
12th	12	D1	89	0x59	-
12th	12	D2	90	0x5A	-
12th	12	D3	91	0x5B	-
12th	12	D4	92	0x5C	-
12th	12	D5	93	0x5D	-
12th	12	D6	94	0x5E	-
12th	12	D7	95	0x5F	-

#### DOU TABLE 46 x LED

(2x MBHP DOUTx4)

Shift Register	SR number	Pin Name	Pin Number	Hex number	LED NAME
<b>MBHP DOUT X4 I</b>					
first	1	D0	0	0x00	PULSE WAVEFORM OFF
first	1	D1	1	0x01	PULSE WAVEFORM1
first	1	D2	2	0x02	PULSE WAVEFORM2
first	1	D3	3	0x03	PULSE WAVEFORM3
first	1	D4	4	0x04	SAW WAVEFORM OFF
first	1	D5	5	0x05	SAW WAVEFORM1
first	1	D6	6	0x06	SAW WAVEFORM2
first	1	D7	7	0x07	SAW WAVEFORM3
second	2	D0	8	0x08	SAW WAVEFORM4
second	2	D1	9	0x09	SAW WAVEFORM5
second	2	D2	10	0x0a	SUB WAVE0
second	2	D3	11	0x0b	SUB WAVE1
second	2	D4	12	0x0c	SUB WAVE2
second	2	D5	13	0x0d	SUB WAVE3
second	2	D6	14	0x0e	SUB WAVE4
second	2	D7	15	0x0f	SUB WAVE5
third	3	D0	16	0x10	SUB WAVE LEVEL OFF
third	3	D1	17	0x11	SUB WAVE LEVEL 1
third	3	D2	18	0x12	SUB WAVE LEVEL 2
third	3	D3	19	0x13	SUB WAVE LEVEL 3
third	3	D4	20	0x14	NOISE OFF

third	3	D5	21	0x15	NOISE LEVEL 1
third	3	D6	22	0x16	NOISE LEVEL 2
third	3	D7	23	0x17	NOISE LEVEL 3
fourth	4	D0	24	0x18	PITCH RANGE 4'
fourth	4	D1	25	0x19	PITCH RANGE 8'
fourth	4	D2	26	0x1a	PITCH RANGE 16'
fourth	4	D3	27	0x1b	PITCH RANGE 32'
fourth	4	D4	28	0x1c	DCO PITCH MODE NORMAL
fourth	4	D5	29	0x1d	DCO PITCH MODE INVERT
fourth	4	D6	30	0x1e	DCO PITCH MODE NORM+DYN
fourth	4	D7	31	0x1f	DCO PITCH MODE INV+DYN
<b>MBHP DOUT X4 II</b>					
fifth	5	D0	32	0x20	PORTA ON
fifth	5	D1	33	0x21	HPF LOW FREQ EMPHASIZED
fifth	5	D2	34	0x22	HPF OFF
fifth	5	D3	35	0x23	HPF CUTOFF LOW
fifth	5	D4	36	0x24	HPF CUTOFF HIGH
fifth	5	D5	37	0x25	VCF ENV MODE NORMAL
fifth	5	D6	38	0x26	VCF ENV MODE INVERT
fifth	5	D7	39	0x27	VCF ENV MODE NORM.DYN.
sixth	6	D0	40	0x28	VCF ENV MODE DYNAMICS
sixth	6	D1	41	0x29	CHORUS ON
sixth	6	D2	42	0x2a	VCA ENV MODE [ENV]
sixth	6	D3	43	0x2b	VCA ENV MODE [GATE]
sixth	6	D4	44	0x2c	VCA ENV MODE [ENV+DYN]
sixth	6	D5	45	0x2d	VCA ENV MODE [GATE+DYN]
sixth	6	D6	46	0x2e	-
sixth	6	D7	47	0x2f	-
seventh	7	D0	48	0x30	-
seventh	7	D1	49	0x31	-
seventh	7	D2	50	0x32	-
seventh	7	D3	51	0x33	-
seventh	7	D4	52	0x34	-
seventh	7	D5	53	0x35	-
seventh	7	D6	54	0x36	-
seventh	7	D7	55	0x37	-
eighth	8	D0	56	0x38	-
eighth	8	D1	57	0x39	-
eighth	8	D2	58	0x3a	-
eighth	8	D3	59	0x3b	-
eighth	8	D4	60	0x3c	-
eighth	8	D5	61	0x3d	-
eighth	8	D6	62	0x3e	-
eighth	8	D7	63	0x3f	-