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#####
# JU CONTROL #
# MBHP DIN DOUT ANIN PIN CONF. #
# V1.0, 10/2011 (lemonhorse@subfrequenz.net) #
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DIN TABLE (15 x BTN, 3 x ENC)

Shift Register	SR number	Pin Name	Pin Number	Hex number	BTN / ENC NAME
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	-
fourth	4	D4	28	0x1c	-
fourth	4	D5	29	0x1d	-
fourth	4	D6	30	0x1e	-
fourth	4	D7	31	0x1f	-

DOUT TABLE 46 x LED  
(2x MBHP DOUTx4)

Shift Register	SR number	Pin Name	Pin Number	Hex number	LED NAME
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
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	MIDI IN NOTE (*)
sixth	6	D7	47	0x2f	MIDI IN CC (*)
seventh	7	D0	48	0x30	MIDI IN SYSEX (*)
seventh	7	D1	49	0x31	MIDI OUT NOTE (*)
seventh	7	D2	50	0x32	MIDI OUT CC (*)
seventh	7	D3	51	0x33	MIDI OUT SYSEX (*)
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	-

\* Time Delay needed here see MBHP LTC (LED connectors / TTL 74HC00)

1x AINx4 (27 x POTS)

AINx4 Jx number	Pin Name	Pin Number	Hex number	POT NAME
AINx4 J1	A0	0	0x00	VCF CUTOFF
AINx4 J1	A1	1	0x01	VCF RESONANCE
AINx4 J1	A2	2	0x02	VCF ENV DEPTH
AINx4 J1	A3	3	0x03	VCF LFO DEPTH
AINx4 J1	A4	4	0x04	VCF KEYBOARD FOLLOWER
AINx4 J1	A5	5	0x05	VCF AFTERTOUC
AINx4 J1	A6	6	0x06	DCO PULSE WITH WAVE3
AINx4 J1	A7	7	0x07	DCO PWM RATE WAVE3
AINx4 J2	A0	8	0x08	DCO ENV PITCH MOD DEPTH
AINx4 J2	A1	9	0x09	DCO LFO PITCH MOD DEPTH
AINx4 J2	A2	10	0x0A	DCO BENDER PITCH RANGE
AINx4 J2	A3	11	0x0B	DCO AFTERTOUC SENSIT.
AINx4 J2	A4	12	0x0C	DCO PORTA TIME
AINx4 J2	A5	13	0x0D	CC7 JU VOLUME
AINx4 J2	A6	14	0x0E	VCA LEVEL
AINx4 J2	A7	15	0x0F	VCA AFTERTOUC
AINx4 J3	A0	16	0x10	ENV L1
AINx4 J3	A1	17	0x11	ENV L2
AINx4 J3	A2	18	0x12	ENV L3
AINx4 J3	A3	19	0x13	KEYB FOLLOWER
AINx4 J3	A4	20	0x14	ENV T1
AINx4 J3	A5	21	0x15	ENV T2
AINx4 J3	A6	22	0x16	ENV T3
AINx4 J3	A7	23	0x17	ENV T4
AINx4 J4	A0	24	0x18	LFO RATE
AINx4 J4	A1	25	0x19	LFO DELAY
AINx4 J4	A2	26	0x1A	CHORUS RATE
AINx4 J4	A3	27	0x1B	NC
AINx4 J4	A4	28	0x1C	NC
AINx4 J4	A5	29	0x1D	NC
AINx4 J4	A6	30	0x1E	NC
AINx4 J4	A7	31	0x1F	NC