Panel layout analysis
Doepfer

Module	1	Jacks	Controls	misc	LEDs	HP^2	HP	est. HP^2	ratio
A-110 VCO	1	9	5	0	0	220	10	203.9655	92.7%
A-110 VCO	1	9	5	0	0	220	10	203.9655	92.7%
A-114 ring mod	1	6	0	0	0	88	4	90.44529	102.8%
A-115 audio divider	1	2	5	0	0	176	8	168.7097	95.9%
A-116 waveform processor	1	4	5	0	0	176	8	178.7827	101.6%
A-138 mixer	1	5	5	0	0	176	8	183.8193	104.4%
A-120 LPF	1	5	5	0	0	176	8	183.8193	104.4%
A-106-6 Xpandfer filter	1	12	5	1	0	264	12	260.6061	98.7%
A-131 expo VCA	1	5	5	0	0	176	8	183.8193	104.4%
A-130 lin VCA	1	5	5	0	0	176	8	183.8193	104.4%
A-118 noise	1	3	4	0	2	176	8	152.6296	86.7%
A-148 S&H	1	6	0	0	4	88	4	87.57628	99.5%
A-145 LFO	1	6	1	1	2	176	8	150.2239	85.4%
A-145 LFO	1	6	1	1	2	176	8	150.2239	85.4%
A-160 clock divider	1	8	0	0	6	88	4	96.21487	109.3%
A-161 clock sequencer	1	8	0	0	8	88	4	94.78037	107.7%
A-180 multiple	1	8	0	0	0	88	4	100.5184	114.2%
A-138 mixer	1	5	5	0	0	176	8	183.8193	104.4%
A-170 slew	1	3	3	1	4	176	8	173.044	98.3%
A-150 VC switch	1	8	0	0	4	88	4	97.64937	111.0%
A-162 trigger delay	1	4	4	0	2	176	8	157.6661	89.6%
A-140 ADSR	1	5	4	1	1	176	8	204.951	116.4%
A-140 ADSR	1	5	4	1	1	176	8	204.951	116.4%

Compare:

A-111-4 quad VCO proposal	1	30	10	9	0	396	18	781.9229	197.5%

Estimated space costs (square HP)

(base)	60.22602
jack	5.036544
control	19.68211
misc	41.53105
LED	−0.71725

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Panel layout analysis
Mutable Instruments

Module	1	Jacks	Controls	misc	LEDs	HP^2	HP	est. HP^2	ratio
Yarns	1	8	4	4	4	264	12	282.9386	107.2%
Braids	1	6	7	4	0	352	16	342.5307	97.3%
Braids	1	6	7	4	0	352	16	342.5307	97.3%
Links	1	12	0	0	3	88	4	124.9321	142.0%
Tides	1	13	7	0	3	308	14	279.7311	90.8%
Ripples	1	9	3	0	0	176	8	166.6046	94.7%
Rings	1	10	12	0	2	308	14	350.7069	113.9%
Elements	1	18	28	0	2	748	34	774.2476	103.5%
Grids	1	14	8	0	3	352	16	312.3024	88.7%
Streams	1	8	11	0	8	264	12	271.6178	102.9%
Kinks	1	12	0	0	3	88	4	124.9321	142.0%
Clouds	1	12	10	0	4	396	18	322.9252	81.5%

Estimated space costs (square HP)

(base)	−4.30967
jack	12.20006
control	20.37127
misc	32.76029
LED	−5.71962

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Panel layout analysis
Makenoise

Module	1	Jacks	Controls	misc	LEDs	HP^2	HP	est. HP^2	ratio
Maths	1	25	12	0	8	440	20	436.2831	99.2%
Moddemix	1	8	2	0	8	132	6	149.0561	112.9%
DPO	1	21	20	0	5	616	28	633.6156	102.9%
Optomix	1	12	4	0	0	176	8	197.2769	112.1%
Echophon	1	13	11	0	4	440	20	385.7087	87.7%
Erbeverb	1	14	13	0	3	440	20	437.9758	99.5%
Wogglebug	1	12	4	0	1	220	10	198.5519	90.3%
Pressure Points	1	11	13	4	4	440	20	467.0634	106.2%
René	1	10	19	18	8	748	34	740.7052	99.0%
Morphagene	1	17	12	4	0	440	20	445.7634	101.3%

Estimated space costs (square HP)

(base)	73.92902
jack	1.62636
control	25.95789
misc	8.172903
LED	1.275049

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Panel layout analysis
Cwejman

Module	1	Jacks	Controls	misc	LEDs	HP^2	HP	est. HP^2	ratio
VCO-2RM	1	17	12	3	0	440	20	441.3754	100.3%
VCA-4MX	1	16	4	0	0	220	10	259.1808	117.8%
D-LFO	1	11	7	4	2	308	14	327.3414	106.3%
RES-4	1	17	12	1	1	528	24	470.37113	89.1%
DMF-2	1	16	9	2	2	352	16	408.1364	115.9%
ADSR-VC2	1	18	8	2	2	440	20	393.3366	89.4%
NS-4	1	8	5	0	0	220	10	246.3234	112.0%
VCO-6	1	12	8	3	0	308	14	322.2529	104.6%
FSH-1	1	8	5	2	0	308	14	236.6135	76.8%
VM-1	1	13	19	3	0	572	26	591.0685	103.3%

Estimated space costs (square HP)

(base)	89.35365
jack	4.6095114
control	24.01874
misc	−4.85494
LED	19.28589

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Panel layout analysis
Intellijel

Module	1	Jacks	Controls	misc	LEDs	HP^2	HP	est. HP^2	ratio
Dixie II+	1	12	4	3	2	176	8	204.6993	116.3%
Dixie II+	1	12	4	3	2	176	8	204.6993	116.3%
buffered multiple	1	8	0	0	0	44	2	52.35214	119.0%
Shapeshifter	1	16	22	1	9	572	26	529.7304	92.6%
Dr. Octature II	1	13	7	2	9	308	14	267.8069	87.0%
Korgasmatron II	1	12	16	4	2	440	20	407.7783	92.7%
K'tron II expander	1	4	6	0	0	132	6	100.2714	76.0%
Jellysquasher	1	12	17	2	11	396	18	419.4667	105.9%
uVCF	1	6	5	0	0	132	6	108.1176	81.9%
uVCF	1	6	5	0	0	132	6	108.1176	81.9%
Linix	1	18	12	0	9	352	16		
Quadra	1	8	8	8	4	264	12		
quad invert	1	8	0	0	0	44	2		
unity mixer	1	8	0	0	0	44	2		
Triatt	1	6	3	3	0	132	6		
uScale	1	4	12	1	12	132	6		
Audio I/O	1	4	4	4	24	220	10		

Estimated space costs (square HP)

(base)	−42.6444
jack	11.874573
control	15.90292
misc	12.24398
LED	2.252609

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Panel layout analysis
Consensus

Module	1	Jacks	Controls	misc	LEDs	HP^2	HP	est. HP^2	ratio
A-110 VCO	1	9	5	0	0	220	10	208.9839	95.0%
A-110 VCO	1	9	5	0	0	220	10	208.9839	95.0%
A-114 ring mod	1	6	0	0	0	88	4	85.44396	97.1%
A-115 audio divider	1	2	5	0	0	176	8	151.41114	86.0%
A-116 waveform processor	1	4	5	0	0	176	8	167.8605	95.4%
A-138 mixer	1	5	5	0	0	176	8	176.0852	100.0%
A-120 LPF	1	5	5	0	0	176	8	176.0852	100.0%
A-106-6 Xpandfer filter	1	12	5	1	0	264	12	247.5856	93.8%
A-131 expo VCA	1	5	5	0	0	176	8	176.0852	100.0%
A-130 lin VCA	1	5	5	0	0	176	8	176.0852	100.0%
A-118 noise	1	3	4	0	2	176	8	134.4633	76.4%
A-148 S&H	1	6	0	0	4	88	4	74.64519	84.8%
A-145 LFO	1	6	1	1	2	176	8	113.74544	64.6%
A-145 LFO	1	6	1	1	2	176	8	113.74544	64.6%
A-160 clock divider	1	8	0	0	6	88	4	85.69517	97.4%
A-161 clock sequencer	1	8	0	0	8	88	4	80.29578	91.2%
A-180 multiple	1	8	0	0	0	88	4	101.8933	115.8%
A-138 mixer	1	5	5	0	0	176	8	176.0852	100.0%
A-170 slew	1	3	3	1	4	176	8	123.2184	70.0%
A-150 VC switch	1	8	0	0	4	88	4	91.09455	103.5%
A-162 trigger delay	1	4	4	0	2	176	8	142.6879	81.1%
A-140 ADSR	1	5	4	1	1	176	8	167.54	95.2%
A-140 ADSR	1	5	4	1	1	176	8	167.54	95.2%
Yarns	1	8	4	4	4	264	12	225.898	85.6%
Braids	1	6	7	4	0	352	16	279.5669	79.4%
Braids	1	6	7	4	0	352	16	279.5669	79.4%
Links	1	12	0	0	3	88	4	126.693	144.0%
Tides	1	13	7	0	3	308	14	273.3299	88.7%
Ripples	1	9	3	0	0	176	8	169.4375	96.3%
Rings	1	10	12	0	2	308	14	350.2215	113.7%
Elements	1	18	28	0	2	748	34	732.3898	97.9%
Grids	1	14	8	0	3	352	16	301.3278	85.6%
Streams	1	8	11	0	8	264	12	297.8008	112.8%
Kinks	1	12	0	0	3	88	4	126.693	144.0%
Clouds	1	12	10	0	4	396	18	321.7251	81.2%
Maths	1	25	12	0	8	440	20	457.3935	104.0%
Moddemix	1	8	2	0	8	132	6	119.84214	90.8%
DPO	1	21	20	0	5	616	28	590.7793	95.9%

Estimated space costs (square HP)

(base)	36.09588
jack	8.22468
control	19.77318
misc	13.92768
LED	−2.69969

Optomix	1	12	4	0	0	176	8	213.8848	121.5%
Echophon	1	13	11	0	4	440	20	349.7229	79.5%
Erbeverb	1	14	13	0	3	440	20	400.1937	91.0%
Wogglebug	1	12	4	0	1	220	10	211.18508	96.0%
Pressure Points	1	11	13	4	4	440	20	428.5307	97.4%
René	1	10	19	18	8	748	34	723.1338	96.7%
Morphagene	1	17	12	4	0	440	20	468.9043	106.6%
VCO-2RM	1	17	12	3	0	440	20	454.9766	103.4%
VCA-4MX	1	16	4	0	0	220	10	246.7835	112.2%
D-LFO	1	11	7	4	2	308	14	315.291	102.4%
RES-4	1	17	12	1	1	528	24	424.4216	80.4%
DMF-2	1	16	9	2	2	352	16	368.1054	104.6%
ADSR-VC2	1	18	8	2	2	440	20	364.7815	82.9%
NS-4	1	8	5	0	0	220	10	200.7592	91.3%
VCO-6	1	12	8	3	0	308	14	334.7605	108.7%
FSH-1	1	8	5	2	0	308	14	228.6146	74.2%
VM-1	1	13	19	3	0	572	26	560.4902	98.0%
Dixie II+	1	12	4	3	2	176	8	250.2684	142.2%
Dixie II+	1	12	4	3	2	176	8	250.2684	142.2%
buffered multiple	1	8	0	0	0	44	2	101.8933	231.6%
Shapeshifter	1	16	22	1	9	572	26	592.33118	103.6%
Dr. Octature II	1	13	7	2	9	308	14	284.98711	92.5%
Korgasmatron II	1	12	16	4	2	440	20	501.4743	114.0%
K'tron II expander	1	4	6	0	0	132	6	187.6337	142.1%
Jellysquasher	1	12	17	2	11	396	18	469.0948	118.5%
uVCF	1	6	5	0	0	132	6	184.3099	139.6%
uVCF	1	6	5	0	0	132	6	184.3099	139.6%
Linix	1	18	12	0	9	352	16	397.1211	112.8%
Quadra	1	8	8	8	4	264	12	360.7014	136.6%
quad invert	1	8	0	0	0	44	2	101.8933	231.6%
unity mixer	1	8	0	0	0	44	2	101.8933	231.6%
Triatt	1	6	3	3	0	132	6	186.5465	141.3%
uScale	1	4	12	1	12	132	6	287.8041	218.0%
Audio I/O	1	4	4	4	24	220	10	139.0054	63.2%

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Panel layout analysis
Summary of results

	Doepfer	Mutable	Makenoise	Cwejman	Intellijel	Consensus
(base)	60.23	−4.31	73.93	89.35	−42.64	36.10
jack	5.04	12.20	1.63	4.61	11.87	8.22
control	19.68	20.37	25.96	24.02	15.90	19.77
misc	41.53	32.76	8.17	−4.85	12.24	13.93
LED	−0.72	−5.72	1.28	19.29	2.25	−2.70

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