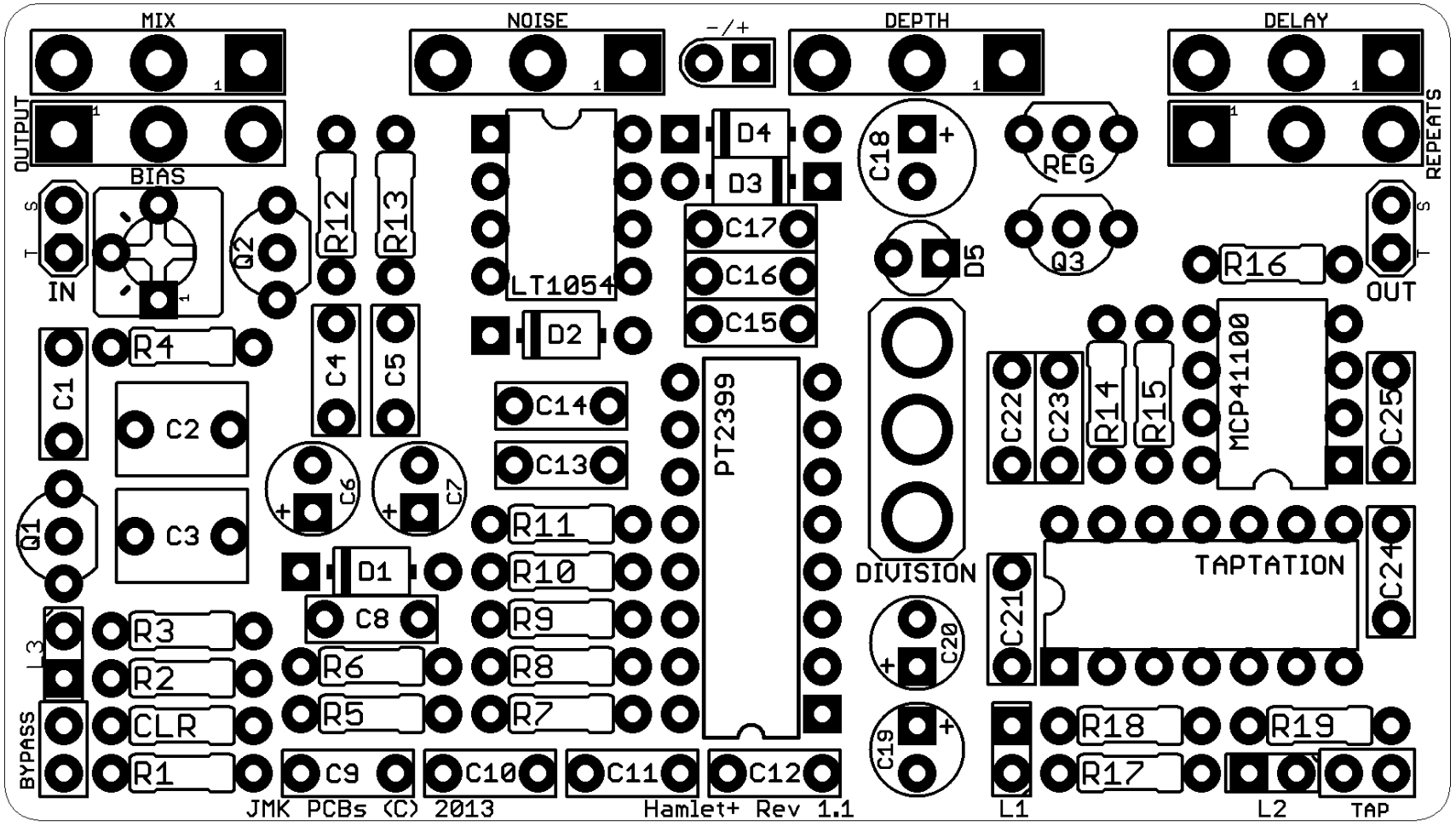
JMK PCBS PRESENTS...

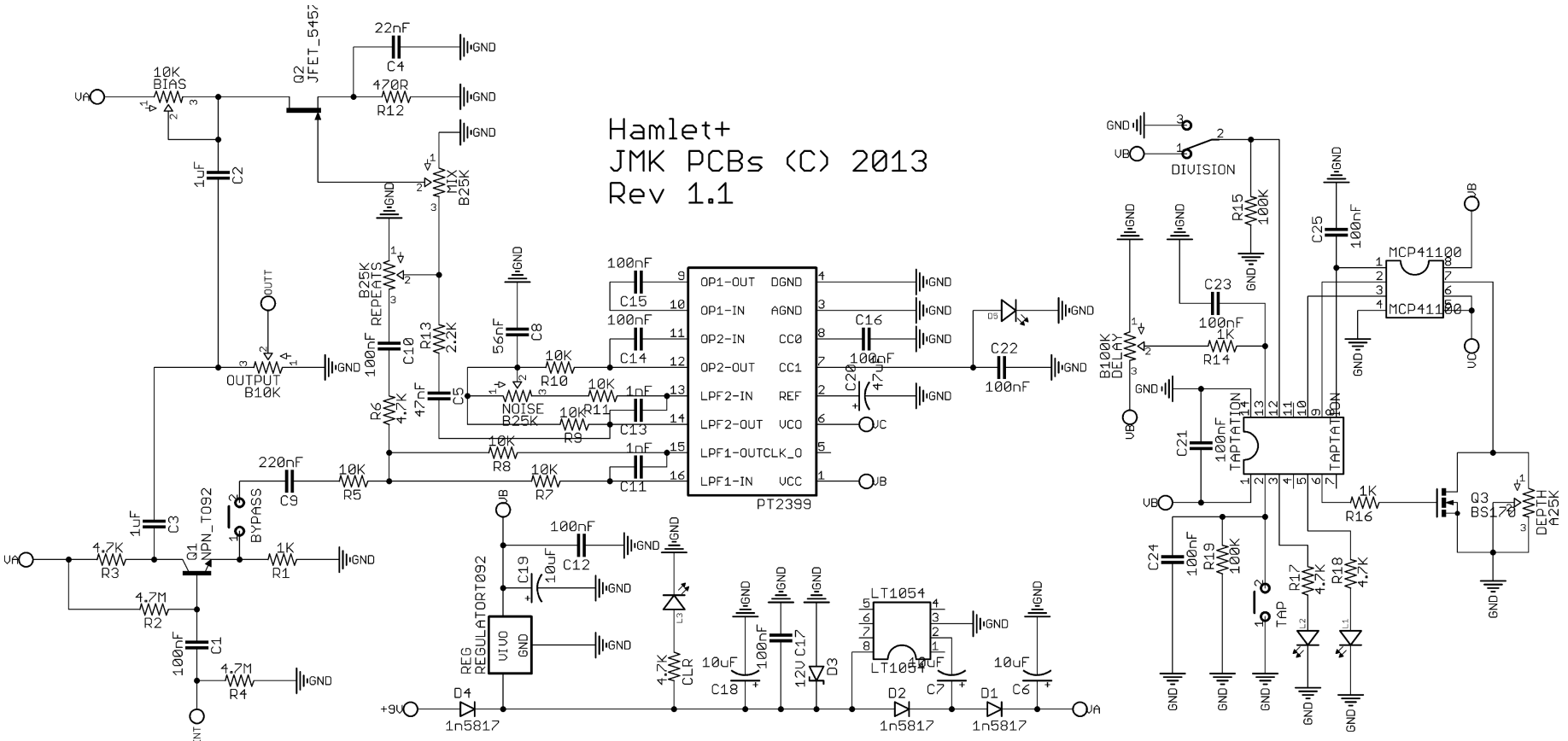
HAMLET+

PCB AND SCHEMATIC ARTWORK (C) 2013 JMK PEDALS

VERSION 1.1: 03/11/2014



Resistors				Semiconducters		Capactitors						Potentiometers	
R1	1K	R11	10K	Q1	2N5088	C1	100nF	C11	1nF	C21	100nF	BIAS	10K
R2	4.7M	R12	470R	Q2	2N5457	C2	1uF	C12	100nF	C22	100nF	MIX	B25K
R3	4.7K	R13	2.2K	Q3	BS170	C3	1uF	C13	1nF	C23	100nF	REPEATS	B100K
R4	4.7M	R14	1K	IC1	LT1054	C4	22nF	C14	100nF	C24	100nF	DELAY	B100K
R5	10K	R15	100K	IC2	PT2399	C5	47nF	C15	100nF	C25	100nF	NOISE	B50K
R6	4.7K	R16	1K	IC3	MCP41100	C6	10uF	C16	100nF	Switches		OUTPUT	B10K
R7	10K	R17	4.7K	IC4	Taptation	C7	10uF	C17	100nF	TAP	Open Momentary	DEPTH	A25K
R8	10K	R18	4.7K	D1, 2, 4	1N5817	C8	56nF	C18	10uF	Division	SPDT on/off/on	Other	
R9	10K	R19	100K	D3	12V Zener	C9	220nF	C19	10uF	Bypass	SPST Latching	REG	78L05
R10	10K	CLR	4.7K	D5	LED	C10	100nF	C20	47uF			L1, L2, L3	LEDs



Build Notes

• The Hamlet+ is a tap tempo integrated PT2399 delay. Unlike typical PT2399's, this delay does not feature Op Amp buffering, but instead features a 'EP' or echoplex type preamp to control the dry signal. This flavours the dry signal a small amount, but also leads to a lower parts count build while allowing the dry signal to run on a supplied ~18V supply rail. This design, the Hamlet delay, was designed and introduced by Jon Patton, to whom the credit goes for the idea and circuit. The Taptation chipset was integrated to the circuit allowing for both tap tempo control AND modulation to be applied.

• The Hamlet's preamp design suits the use of a constant signal output, so rather than utilize true bypass, the circuit features a simple switch to turn the Delay feed on and off, rather than turning the whole circuit on and off. This also allows for a 'tails' feature - when bypassed the repeats continue. However, it should be noted, losing power will cut the signal entirely.

• Hooking up the PCB is pretty simple, but to clarify: IN = Input connection (T=Tip, S=Ground); OUT = Output connection (T=Tip, S=Ground); Bypass = Connection to the Bypass Switch; Tap = Connection to the Tap Tempo Switch; - = Connection to the DC Jack Ground Lug; + = Connection the DC Jack Positive Lug

• There is an onboard Bypass LED with accompanying CLR on this edition of the Hamlet Delay (L3). Most JMK PCBs do feature an onboard CLR and omit the LED. To utilize the onboard LED use a DPDT switch in place of a SPDT bypass switch, connecting the negative end to the second pole but same throw side as your bypass pads. Finally, you'd need to connect the common lug of the switch to ground utilizing the LED pads on the PCB.

• There are two LEDs included for tap tempo indication. You do not have to use them, and you may simply leave them off by not populating R17, R18, L1 and L2. However, if you do wish to use them, here is what they do:

  •L1 shows the scale clock that is set by the division switch. This will match the rate of the repeats that have been 'divided' by the taptation circuitry. R18 is the matching CLR

  • L2 shows the tempo clock that has been tapped in. This will match the rate at which you tap the 'tap' switch. R17 is the matching CLR

• It may be valuable to understand and read up on the Taptation documentation. You can find the datasheet on the chipset here, and the application notes for the PT2399 chip here.

• The Taptation chipset is currently only available from the store at DIY Stompboxes. Here is a link to where you can buy the chipset, which includes the Taptation chip AND the MCP41100 digital pot.

• Aside from the Taptation set, the other IC's you need to buy are the LT1054 Charge Pump and the PT2399 Delay Chip. Not all PT2399's are created equal, and we highly recommend buying several from an inexpensive source like Tayda Electronics. You can then 'audition' the various chips and select the one which you find sounds best.

Wiring Diagram