Stack/Accumulator ISA with five PDP11 addressing modes

James C. Brakefield (2021)

Most instructions use two bytes, this sheet has the one byte op-codes

Op	# ops	description	std. stack operation	detailed descripton	comments
RTN	0.125	Pop return stack top into PC			
ILLO	0.125	Illegal instruction	zero op-code		
ILL1	0.125	Illegal instruction	all ones op-code		
BRK	0.125	Breakpoint op-code			
NOP	0.125	Skip to next byte			
DUP	0.125	Duplicate and push top of data stack			
DROP	0.125	Pop top of data stack			
SWAP	0.125	Swap top two entries of data stack			
LMARK0	0.125	Push address of next instruction to return stack			setup WHILE true (TOS <> 0) loop
LMARK1	0.125	Push address of next instruction and TOS to return stack		DSTK: count	setup count-down loop
LMARK2	0.125	Push address of next instruction and TOS and SOS to return stack		DSTK: count, limit	setup count-up loop
LMARK3	0.125	Push address of next instruction and TOS and SOS 3OS to return stack		DSTK: count, limit, delta	setup count-up loop with start, limit and displacement
LPWHLE	0.125	Loop if TOS <> 0, else pop TROS to PC			RSTK: loop top adr
LPCNTD	0.125	Decrement TROS, Loop if ⇔ 0, else pop 2ROS to PC			RSTK: loop top adr, current count (decreasing)
LPCNTUP	0.125	Increment count and loop if < limit			RSTK: loop top adr, limit, current count (increasing)
LPDELUP	0.125	Add delta to count and loop if < limit			RSTK: loop top adr, limit, delta, current position
ZERO		Push the constant zero			
ONE		Push the constant one			
NEG1		Push the constant negative one			
CALL		Execute subroutine at TOS			
20	2				