Jan Pedersen 23 June 1986

Key: '09 = 12K Dandetiger
 '08 = 4K Dandelion
 '00 = Dolphin

'00 = Dolphin
'32 = Dorado (as reported by Gwan)
'32L = Dorado (as reported by Larry)
'86-4 = 4K Daybreak
'86-8 = 8K Daybreak
X = Has microcode
P = Prolog microcode set
- = Doesn't have microcode
? = Don't know

Opcodes listed by entry in UFN table

on	109	′08	00	132	′32L	186-4	186-8	Name
op					э г п			
000	X	X	X	X		X	X	-X-
001	X	X	X	X	X	X	X	CAR
002	X	X	X	X	X	X	X	CDR
003	X	X	X	X	X	X	X	LISTP
004	X	X	X	X	X	X	X	NTYPX
005	X	X	X	X	X	X	X	TYPEP
006	X	X	X	X	X	X	X	DTEST {new COERCE}
007	_	_	_	_	_	_	_	CDDR {unused}
007								oppin (unapou)
0.7.0	••					**	**	777.0
010	X	X	X	X	X	X	X	FN0
	X	X	X	X	X	X	X	
015	X	X	X	X	X	X	X	FNX
016	X	X	X	X	X	X	X	APPLYFN
017	-	_	-	-	X	_	_	CHECKAPPLY { ? }
017	_	_	_	_	Λ	_	_	CHECKAPPLI(:)
020	X	X	X	X	X	X	X	RETURN
021	X	X	X	X	X	X	X	BIND
022	X	X	X	X	X	X	X	UNBIND
023	X	X	X	X	X	X	X	DUNBIND
024	X	X	X	X	X	X	X	RPLPTR.N
025	X	X	X	X	X	X	X	GCREF
026	X	_	_	_	_	_	_	ASSOC
027	X	X	X	X	X	X	X	GVAR←
027	Λ	Λ	Λ	Λ	Λ	Λ	Λ	GVAR
030	X	-	X	X	X	X	X	RPLACA
031	X	_	X	X	X	X	X	RPLACD
032	X	X	X	X	X	X	X	CONS
	_	_	_	_	_	_	_	
033								{unused}{will be GETPROP}
034	X	-	-	-	-	-	-	FMEMB
035	_	_	-	-	_	_	_	{unused}{will be GETHASH}
036	_	_	_	_	_	_	_	{unused}{will be PUTHASH}
037	X	_	X	X	X	X	X	CREATECELL
037	Λ	_	Λ	Λ	Λ	Λ	Λ	CREATECELL
040	X	-	X	X	X	X	X	BIN
041	_	-	_	_	-	_	_	BOUT {unused}
042	P	_	_	_	_	_	_	{Prolog}OPFETCHPLUSOPDISP
043	_	_	_	_	_	_	_	{unused}{will be LIST1}
044	-	-	-	-	-	-	-	DOCOLLECT {unused}
045	-	-	-	-	-	-	-	ENDCOLLECT {unused}
046	X	-	X	_	-	X	X	RPLCONS
047	X	_	_	_	_	_	_	LISTGET
017								1151611
0.50								T. T.
050	-	-	-	-	-	-	-	ELT
051	-	-	-	-	-	-	-	NTHCHC
052	_	_	_	_	_	_	_	SETA
053	_	_	_	_	_	_	_	RPLCHARCODE {unused}
054	X	X	X	X	X	X	X	EVAL
055	-	-	-	-	-	-	-	{unused}EVALV
056	X	X	-	-	X	X	X	TYPECHECK
057	X	X	X	?	X	X	X	STKSCAN
00,				•				5 11.5 611.
0.00	v	_	_	_	_	_	_	DIIODI T
060	X							BUSBLT
061	X	-	-	-	-	-	-	MISC8{IBLT1 and IBLT2}
062	X	-	-	-	-	-	-	POLY {Poly; Mat. Multiply}
063	X	X	_	_	X	X	X	TYPEMASK.N
064	P	_	_	_	_	_	_	
							-	{Prolog}PROLOGREADPTR
065	P	-	-	-	-	-	-	{Prolog}PROLOGREADTAG
066	P	-	-	-	-	-	-	{Prolog}PROLOGWRITETAGPTR
067	P	_	-	-	-	_	_	{Prolog}PROLOGWRITEOPTR
								. 5,

070	X	-	-	_
0.171				
071	-	-	-	-
072	X	X	_	_
073	X	-	-	-
074	X	X	?	?
075	X	X	-	_
076	X	X	X	X
			21	21
077	_	_	_	_
0				
100	v	v	v	v
100	X	X	X	X
	X	X	X	X
107	X	X	X	X
107	21	21	21	21
	**	**	**	**
110	X	X	X	X
	X	X	X	X
117	X	X	X	X
120	X	X	X	X
120				
	X	X	X	X
127	X	X	X	X
130	X	X	X	X
130	Λ			
	X	X	X	X
137	X	X	X	X
1 4 0	v	v	v	v
140	X	X	X	X
141	X	X	_	_
142	X	X	X	X
143	X	X	X	X
144	X	X	X	X
145	_	_	-	X
143				
146	X	X	X	X
147	X	X	X	X
150	X	X	X	X
130				
151	X	X	X	X
152	X	X	X	X
1 - 2	7.7	7.7	7.7	7.7
153	X	X	X	X
154	X	X	X	X
134				
155	X	X	X	X
156	X	X	X	X
157	X	X	X	X
160				
	Y	x	y	Y
	X	X	X	X
161	X X	X X	X X	X X
161	X	X	X	X
161 162	X X	X X	X X	X X
161 162 163	X X X	X	X X X	X X ?
161 162 163	X X X	X X X	X X X	X X ?
161 162 163 164	X X X X	Х Х Х	X X X X	X ? ?
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161 162 163 164 165	X X X X	X X X -	X X X X	X X ? ?
161 162 163 164	X X X X	Х Х Х	X X X X	X ? ?
161 162 163 164 165 166	X X X X X	X X X - - X	X X X X X	X X ? ? ?
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247	X	X	X	X	X	X	X	TJUMP07
250	Х	Х	Х	Х	Х	X	Х	TJUMP10
	X	X	X	X	X	X	X	
257	X	X	X	X	X	X	X	TJUMP17
260	X	X	X	X	X	X	X	JUMPX
261 262	X X	JUMPXX						
263	X	X	X	X	X	X	X	FJUMPX TJUMPX
264	X	X	X	X	X	X	X	NFJUMPX
265	X	X	X	X	X	X	X	NTJUMPX
266	X	-	-	-	-	-	-	ARRAYINDEX1
267	X	-	-	-	-	-	-	ARRAYINDEX2
270	X	X	X	X	X	X	X	PVAR0←
 276	X X	 PVAR6←						
276	X	X	X	X	X	X	X	POP
211	Λ	Λ	Λ	Λ	Λ	Λ	Λ	FOF
300	X	X	-	-	-	X	X	POP.N
301	X	X	-	-	-	X	X	ATOMCELL.N
302	X	X	X	X	X	X	X	GETBASEBYTE
303	-	-	-	-	-	-	-	{unused}
304	X	X	X	X	X	X	X	BLT
305	X	-	-	-	-	-	-	PIXELBLT
306	- v	- V	-	- v	- v	- v	-	{unused}
307	X	X	X	X	X	X	X	PUTBASEBYTE
310	Х	Х	Х	Х	Х	Х	Х	GETBASE.N
311	X	X	X	X	X	X	X	GETBASEPTR.N
312	X	X	X	X	X	X	X	GETBITS.N.FD
313	_	_	_	_	_	_	_	{unused}{new GETBASEFIXP}
314	-	_	-	-	-	-	_	{unused}{new PUTBASEFIXP}
315	X	X	X	X	X	X	X	PUTBASE.N
316	X	X	X	X	X	X	X	PUTBASEPTR.N
317	X	X	X	X	X	X	X	PUTBITS.N.FD
320	Х	Х	Х	Х	X	Х	Х	ADDBASE
321	X	X	X	X	X	X	X	VAG2
322	X	X	X	X	X	X	X	HILOC
323	X	X	X	X	X	X	X	LOLOC
324	X	X	X	X	X	X	X	PLUS2{see notes}
325	X	X	X	X	X	X	X	DIFFERENCE{see notes}
326	X	X	X	X	X	X	X	TIMES2{see notes}
327	X	X	X	X	X	X	X	QUOTIENT{see notes}
330	Х	Х	Х	Х	Х	X	Х	IPLUS2{see notes}
331	X	X	X	X	X	X	X	IDIFFERENCE { see notes }
332	X	X	X	X	X	X	X	ITIMES2{see notes}
333	X	X	X	X	X	X	X	IQUOTIENT { see notes }
334	X	X	X	X	X	X	X	IREMAINDER(see notes)
335	-	-	-	-	-	X	X	{unused}{IPLUS.N}
336	-	-	-	-	-	X	X	{unused} {IDIFFERENCE.N}
337	-	-	-	-	-	-	-	{unused}
340	Х	Х	Х	Х	X	X	Х	LLSH1{see notes}
341	X	X	X	X	X	X	X	LLSH8{see notes}
342	X	X	X	X	X	X	X	LRSH1{see notes}
343	X	X	X	X	X	X	X	LRSH8{see notes}
344	X	X	X	X	X	X	X	LOGOR2{see notes}
345	X	X	X	X	X	X	X	LOGAND2{see notes}
346	X	X	X	X	X	X	X	LOGXOR2{see notes}
347	-	-	-	-	-	-	-	$\{unused\}\{new ALSH\}$
350	Х	_	Х	Х	Х	_	Х	FPLUS2
351	X	-	X	X	X	-	X	FDIFFERENCE
352	X	-	X	X	X	-	X	FTIMES2
353	X	-	X	X	X	-	X	FQUOTIENT
354	X	-	-	-	-	-	-	UBFLOAT2 {UFADD, UFSUB,
								UFISUB, UFMULT, UFDIV,
255	37				77			UGREAT, UMAX, UMIN, UREM
355	X	-	-	-	X	-	-	UBFLOAT1 {UTOB, BTOU, UABS, UNEG, UFIX}
356	Х	_	_	_	_	_	_	ARRAYREAD { GENERAL , UNBOXED }
357	X	_	_	_	_	_	-	ARRAYWRITE { GENERAL, UNBOXED }
								(,)
360	X	X	X	X	X	X	X	EQ
361	X	X	X	X	X	X	X	IGREATERP
362	X	-	X	X	X	-	X	FGREATERP

363	X	X	X	X	X	X	X	GREATERP
364	X	X	3	?	X	-	X	EQUAL
365	X	-	X	X	X	-	X	MAKENUMBER
366	X	-	X	X	X	-	-	BOXIPLUS
367	X	-	X	X	X	-	-	BOXIDIFFERENCE
370	_	_	_	_	_	_	_	MISC5
371	Х	_	_	_	_	_	_	FFTSTEP
	X	_		_	_	_	_	
372		-	-	-	-	-	-	MISC3 {Floating Point Array ops: EXP, MAG, FLOAT, COMPLEX, BLKMAX, BLKMIN, BLKABSMAX, BLKABSMIN, FLOATTOBYTE}
373	Х	-	-	-	-	-	-	MISC4 {Floating Point Array ops: TIMES, PERM, PLUS, DIFFERENCE, MAGIC, BITMAPBIT}
374	-	-	?	-	X	-	-	{reserved for DOLPHIN}
375	X	X	X	X	X	X	X	ŚWAP
376	X	X	X	X	X	X	X	NOP
377	-	-	-	-	-	-	-	{unused}

notes:

4K microcode:

PLUS2, DIFFERENCE, TIMES2, QUOTIENT will ufn if args not INTEGERS
IPLUS2, IDIFFERENCE will accept FIXP's as arguments, but will ufn if result is not a smallp or

smallneg
ITIMES2, IQUOTIENT, IREMAINDER will ufn if both args are not smallp

12K microcode:
PLUS2, DIFFERENCE, TIMES2, QUOTIENT will try floating point if args not INTEGERS
IPLUS2, IDIFFERENCE will accept FIXP's as arguments, and box the result if it is not a smallp or smallneg
ITIMES2, IQUOTIENT, IREMAINDER will ufn if both args are not smallp