

Index -----	Additional -----	Description -----
0	[2 bytes]	Start of a program line / line number. If an empty line could be a END IF or REPEAT or REMARK
***** Operators *****		
1	=	Equal (integer)      May also be the same as code 148, in SELECT
2	=	Equal (float)
3	=	Equal (string)      May also be the same as code 149, in SELECT
52	==	Equal (float)      May be the same as code 146, in SELECT
53	==	Equal (string)
4	<>	Not equal (integer)
5	<>	Not equal (float)
6	<>	Not equal (string)
7	<	Less than (integer)
8	<	Less than (float)
9	<	Less than (string)
10	>	Greater than (integer)
11	>	Greater than (float)
12	>	Greater than (string)
13	<=	Less than or equal (integer)
14	<=	Less than or equal (float)
15	<=	Less than or equal (string)
16	>=	Greater than or equal (integer)
17	>=	Greater than or equal (float)
18	>=	Greater than or equal (string)
19	+	Add (integer)
20	+	Add (float)
21	-	Subtract (integer)
22	-	Subtract (float)
23	*	Multiply (integer)
24	*	Multiply (float)
26	/	Divide (integer)      Same as 45 - DIV
	/	Divide (float)
27	&	Join strings

28	&&	Bitwise AND
29		Bitwise OR
30	^^	Bitwise XOR
31	~~	Bitwise NOT
40	OR	As in IF (a OR b)
41	AND	As in IF (a AND b)
42	XOR	
43	NOT	(Integer)
44	MOD	
45	DIV	Divide (integer)
46	NOT	(float)
47	INSTR	
48	^	Raise to a power (float)

\*\*\*\*\* Actual values \*\*\*\*\*

55	[2 bytes]	An actual integer to put on stack
56	[6 bytes]	An actual (6 byte) floating point to put on stack
54	[4 bytes]	An actual (4 byte) floating point to put on the stack
57	[undefined]	An actual string to put on stack      See also 117 for PRINT statements
58		A zero to put on stack (integer)

\*\*\*\*\* Normal variables \*\*\*\*\*

59	[2 bytes]	Get a variable (integer)
60	[2 bytes]	Get a variable (float)
213	[2 bytes]	Get a variable (short float)
61	[2 bytes]	Get a variable (string). Also get an array element
211	[2 bytes]	Get a sub-string of a string variable (string). Stack contains range TOS is the end value, NOS is the start value
212	[2 bytes]	Get a variable (string) by reference? Only seen in V5.05
62	[2 bytes]	Assign a variable (integer)
63	[2 bytes]	Assign a variable (float)
64	[2 bytes]	Assign a variable (string)
210	[2 bytes]	Append a string on the stack onto the end of a string variable
200	[4 bytes]	Add to an integer variable, an integer      1 <sup>st</sup> word variable, 2 <sup>nd</sup> word value
201	[4 bytes]	Subtract from an integer variable, an integer      1 <sup>st</sup> word variable, 2 <sup>nd</sup> word value
202	[4 bytes]	Multiply an integer variable, by an integer      1 <sup>st</sup> word variable, 2 <sup>nd</sup> word value
205		Add 1 to a float on the stack
206		Subtract 1 from a float on the stack

\*\*\*\*\* Arrays \*\*\*\*\*

65	[4 bytes]	DIMention a integer array (1 or more elements )   First word is no of
66	[4 bytes]	DIMention a float array (1 or more elements )   elements - 1
67	[2 bytes]	DIMention a string array (1 element )
68	[4 bytes]	DIMention a string array (2 or more elements ) 1 <sup>st</sup> word is no of elements - 2
260	[4 bytes]	LOCAl DIMention a integer array (1 or more elements )   First word is no of
261	[4 bytes]	LOCAl DIMention a float array (1 or more elements )   elements - 1
262	[2 bytes]	LOCAl DIMention a string array (1 element )
263	[4 bytes]	LOCAl DIMention a string array (2 or more elements ) First word is no of elements - 2
69	[2 bytes]	Get an array element (integer) multiple element
70	[2 bytes]	Get an array element (float) multiple element Get an array element (string) See 61
71	[2 bytes]	Assign a numeric array element (integer)
72	[2 bytes]	Assign an array element (float)
73	[2 bytes]	Assign an array element (string)
74	[2 bytes]	Assign a substring of an array element (string) As in A\$(1 TO 1)="x", or A\$(3)="x"

\*\*\*\*\* Stack manipulation \*\*\*\*\*

75		Covert a string variable on stack to an actual string
76		Convert integer on stack to a float
77		Convert a float to an integer
78		Convert an integer on stack to a string
79		Convert to a negative (integer)
80		Convert to a negative (float)
81		Move a float onto the main stack
290		Same as 81
82		Move a float from the main stack
291		Same as 82
83		Convert a 6 byte FP ASCII string on stack to a float
89		Convert a 4 byte FP ASCII string on stack to a float
84		Convert variable to ASCII for PRINT/INPUT
85		Duplicate integer on top of the stack onto the stack (part of Procedure parameter passing)
86		Move an integer onto the main stack
87		Move an integer from the main stack
88		Convert a decimal ASCII string to an integer (long?)

\*\*\*\*\* PEEK/POKE \*\*\*\*\*

90		PEEK
91		PEEK_W
92		PEEK_L
93		POKE
94		POKE_W
95		POKE_L

\*\*\*\*\* Keyword table commands \*\*\*\*\*

96		Precedes actual parameters of a command
97	[2 bytes] [undefined]	Keyword table entry (procedure) Parameter bytes
105	[2 bytes]	Get a variable (integer) for a Procedure call, (Same as 55, but different?)
98	[4 bytes] [undefined]	Keyword table entry (function) Parameter bytes 1 <sup>st</sup> word - Function type 1=String, 2=Float 2 <sup>nd</sup> word - Reference to keyword table entry

\*\*\*\*\* Procedures and Functions \*\*\*\*\*

99	[4 bytes]	Call a Proc/Fun, also GOSUB - don't know what is special about this
100	[4 bytes]	Call a Proc/Fun, also GOSUB
101	[2 bytes]	Local parameter for proc/fun (integer)      also LOCal variable (integer)
126	[2 bytes]	Local parameter for proc/fun2 (integer)      (same as 101, but different)
102	[2 bytes]	Local parameter for proc/fun (float)      also LOCal variable (float)
106	[2 bytes]	Local parameter for proc/fun2 (float)      (same as 102, but different)
125	[2 bytes]	Local parameter for proc/fun (float array)
103	[2 bytes]	Local parameter for proc/fun ??? string      also LOCal variable (string)
104		Process returned string form a string function call
107	[2 bytes]	Local parameter forproc/fun2 (string)      (same as 103, but different)
108		Something to do with Procedure parameter passing (string)
260	[4 bytes]	LOCal DIMention a integer array (1 or more elements )   First word is no of
261	[4 bytes]	LOCal DIMention a float array      (1 or more elements )   elements - 1
262	[2 bytes]	LOCal DIMention a string array      (1 element )
263	[4 bytes]	LOCal DIMention a string array      (2 or more elements ) First word is no of elements - 2
109		RETurn/END DEF

\*\*\*\*\* PRINT \*\*\*\*\*

110		PRINT	
111		, (comma)	In PRINT/INPUT print spaces to the next tab
112		Newline	in PRINT/INPUT - On it's own means PRINT#x
113		TO	In PRINT/INPUT
117	[undefined]	An actual string	to put on stack for a PRINT
118		!	(space separator) In PRINT

\*\*\*\*\* INPUT \*\*\*\*\*

120		INPUT (integer)
121		INPUT (float)
122		INPUT (string)
123		, (comma) After text in INPUT/PRINT

\*\*\*\*\* FOR loops \*\*\*\*\*

129	[6 bytes]	Do simple FOR - 3 values on stack
130		Do the FOR
131	[6 bytes]	Single FOR selection - 1 <sup>st</sup> word is variable, 2 <sup>nd</sup> & 3 <sup>rd</sup> address offset
137	[6 bytes]	Single FOR selection - 1 <sup>st</sup> word is variable, 2 <sup>nd</sup> & 3 <sup>rd</sup> address offset
132	[4 bytes]	Range FOR selection
133	[6 bytes]	FOR without STEP
134	[6 bytes]	FOR with STEP
		1 <sup>st</sup> word - pointer to loop variable
		2 <sup>nd</sup> & 3 <sup>rd</sup> words - Pointer to start of FOR loop
135	[2 bytes]	END FOR (float) Word is variable
136	[2 bytes]	END FOR (integer) Word is variable

\*\*\*\*\* IF..THEN \*\*\*\*\*

140	[2 bytes]	IF/THEN	
141	[4 bytes]	IF/THEN	Long address offset, may have code 240 for ELSE
142	[2 bytes]	IF/THEN/GO TO	

\*\*\*\*\* SELECT ON \*\*\*\*\*

144	[4 bytes]	ON - long word pointer to start of code to do
145	[2 bytes]	ON - word pointer to start of code to do
148		= (ON) (integer) same as index 1?
146		= (ON) (float)
149		= (ON) (string) same as index 3?
250		TO (ON) (integer)
147		TO (ON) (float)
251		TO (ON) (string) ?? Reserved

= REMAINDER is handled by loop

\*\*\*\*\* Various QDOS functions \*\*\*\*\*

150		CODE()
151		CHR\$()
152		LEN()
153		RESPR()
154		FILL\$()
155		EOF for embedded DATA statements
156		EOF() channels
157	[4 bytes]	DIMN First word is the array Second word is dimension number in the array
158	[2 bytes]	DIMN Without dimension number

\*\*\*\*\* Various QDOS commands \*\*\*\*\*

160	[2 bytes]	GOTO watch out for Def Proc/Fun & REPEAT & IF/THEN/ELSE
240	[4 bytes]	Long GO TO as above
161		STOP also NEW
162		READ integer
163		READ float
164		READ string
165	[4 bytes]	RESTORE
166		CLEAR
167	[8 bytes + (4*number of destinations)]	ON..GOTO 1 <sup>st</sup> word - Number of destinations 2 <sup>nd</sup> word - end marker? 3 <sup>rd</sup> & 4 <sup>th</sup> words - Destination addresses (continues...)
168	[12 bytes + (4*number of destinations)]	ON..GOSUB 1 <sup>st</sup> word - Number of destinations 2 <sup>nd</sup> & 3 <sup>rd</sup> words - RETurn addresses 4 <sup>th</sup> word - end marker? 5 <sup>th</sup> & 6 <sup>th</sup> words - Destination addresses (continues...)

169	[4 bytes]	EXIT loop, Long GOTO
170	[4 bytes]	NEXT loop, Long GOTO
171		BLOCK
172	[4 bytes]	WHEN_ERROR 0
173	[4 bytes]	WHEN_ERROR 1
174		END_WHEN
175	[4 bytes]	RETRY

\*\*\*\*\* Channels \*\*\*\*\*

180	Check channel is open	(These may be the wrong way round)
181	Check if a channel is a window	
183	Colour Stipples (double and triple)	

\*\*\*\*\* Program initialization \*\*\*\*\*

190	Something to with procedure parameter passing (string)
191	Some kind of a marker, EXTERNAL/GLOBAL ?
185	[6 bytes] External procedure initialization 1 <sup>st</sup> word is reference 2 <sup>nd</sup> and 3 <sup>rd</sup> word is a long pointer (ref A6) to start of Proc/FuN
192	[2 bytes] FOR loop identifier (integer?)
193	[4 bytes] Variable initialization - String & Arrays (all)
194	[14 bytes] Used in BASIC program initialization of some sort
195	[2 bytes] Used in BASIC program initialization of some sort
196	[2 bytes] Variable initialization - Float
197	[2 bytes] Variable initialization - Integer
198	[2 bytes] Variable initialization - Float(2) - Function results?
199	Used in BASIC program initialization of some sort

\*\*\*\*\* Turbo Toolkit commands handled internally by the compiler \*\*\*\*\*

220	POKE\$
221	RETRY_HERE
222	MOVE_MEMORY Reads integer, float, float
223	MOVE_MEMORY2 Reads float, float, float
224	MOVE_MEMORY3 Reads float, float, float
226	MOVE_MEMORY4
225	SNOOZE

\*\*\*\*\* Turbo Toolkit Functions handled internally by the compiler \*\*\*\*\*

230		PEEK\$
231		OPTION_CMD\$
232	[2 bytes]	LEN(variable)
233		ERLIN%
234		ERNUM%

\*\*\*\*\* Compiler manipulation \*\*\*\*\*

240	[4 bytes]	Move program pointer to the Long word + A6 (Like GO TO)
244	[4 bytes]	Suspend job for 5 ticks

\*\*\*\*\* Odds \*\*\*\*\*

241		Precedes use of external variable change
242		Follows use of external variable change
243	[4 bytes]	Call EXTERNAL Proc/FuN
249		Unknown artefact of an extra word of \$4A46 after a go to in versions 5.00 - 5.09