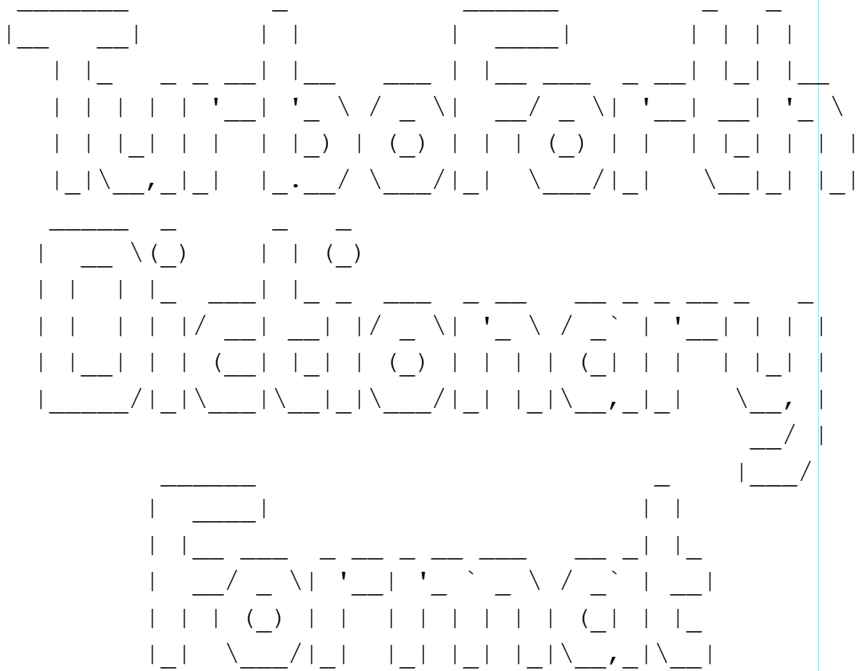


Data Sheet - 20th May 2011



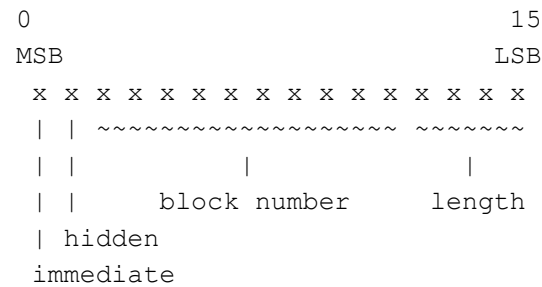
The dictionary in TurboForth is a linked list, with the first entry in a dictionary entry being a pointer to the \*previous\* entry.

The dictionary is searched (by FIND) from the most recent entry to the first entry, i.e the dictionary is searched in reverse order.

The first entry in a dictionary entry is a pointer to the previous dictionary entry. It is a 16-bit word.

- The next 16-bit word in the dictionary entry contains:
- \* Length of the name of the word (bits 12 to 15)
  - \* Block number that the word is defined in (bits 2 to 11)
  - \* Hidden flag (bit 1)
  - \* Immediate flag (bit 0)

as seen below:



The block number is encoded into the word by HEADER during LOADING of a block. This allows the word to be easily located (if it has been loaded) by use of the word WHERE - e.g. WHERE WILLIS

Note that since the name of the word can only be 4 bits, the maximum length of a word is 15 characters.

The next entry in the dictionary entry is the actual text of the word name. One byte per character, in normal ASCII. The word is padded with a space or zero if the word is an odd length.

The next entry is the CFA (Code Field Address). This is a pointer to the machine code that will be executed when the word is executed. For primitive words, the value of the word will be address of the word plus 2 (i.e it points to the word immediately following it). For Forth (i.e. high level) words it points to DOCOL.

If the following words were entered at the keyboard immediately after booting: (i.e RAM is empty)

```
: MARK ;
: WILLS ;
```

The dictionary entries would look like this:

	Address	Value	
	-----		
+-->	A302	7F04	* POINTER TO PREVIOUS WORD IN CART ROM
	A004	0004	* LENGTH OF THE NAME 'MARK'
	A006	4D	M
	A007	41	A
^	A008	52	R
	A009	4B	K
	A00A	8320	* POINTER TO DOCOL IN PAD RAM
	A00C	832E	* POINTER TO EXIT IN PAD RAM
+--<	A00E	A302	* POINTER TO PREVIOUS DICTIONARY ENTRY
	A010	0005	* LENGTH OF WORD 'WILLS'
	A012	57	W
	A013	49	I
	A014	4C	L
	A015	4C	L
	A016	53	S
	A017	00	* PAD TO EVEN ADDRESS
	A018	8320	* POINTER TO DOCOL IN PAD RAM
	A01A	832E	* POINTER TO EXIT IN PAD RAM

This can be confirmed by starting TurboForth and holding the ENTER key as it starts (to bypass auto loading). Then enter:

```
0 $A302 30 DUMP
```