TBLRD

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TBLRD	Table Read

Syntax:	[*label*] TBLRD (*; *+; *-; +*)
Operands:	None
Operation:	if TBLRD *, (Prog Mem (TBLPTR)) $\rightarrow$ TABLAT; TBLPTR - No Change; if TBLRD *+, (Prog Mem (TBLPTR)) $\rightarrow$ TABLAT; (TBLPTR) +1 $\rightarrow$ TBLPTR; if TBLRD *-, (Prog Mem (TBLPTR)) $\rightarrow$ TABLAT; (TBLPTR) -1 $\rightarrow$ TBLPTR; if TBLRD +*, (TBLPTR) +1 $\rightarrow$ TBLPTR; (Prog Mem (TBLPTR)) $\rightarrow$ TABLAT;

Status Affected: None

Encoding:

0000	0000	0000	10nn

			nn=0 *
			  =1 *+
			  =2 *-
			  =3 +*

Description: This instruction is used to read the contents of Program Memory (P.M.). To address the program memory, a pointer called Table Pointer (TBLPTR) is used. The TBLPTR (a 21-bit pointer) points to each byte in the program memory. TBLPTR has a 2 Mbyte address range.

TBLPTR[0] = 0: Least Significant Byte of Program Memory Word

TBLPTR[0] = 1: Most Significant Byte of Program Memory Word

The TBLRD instruction can modify the value of TBLPTR as follows:
- no change
- post-increment
- post-decrement
- pre-increment

Words:	1
Cycles:	2

Q Cycle Activity:

Q1	Q2	Q3	Q4
Decode	No operation	No operation	No operation
No operation	No operation (Read Program Memory)	No operation	No operation (Write TABLAT)

Example1:   TBLRD   *+ ;

Before Instruction

TABLAT   =   0x55

```
TABLAT              =    0x55
TBLPTR              =    0x00A356
MEMORY(0x00A356)    =    0x34
```

After Instruction

```
TABLAT              =    0x34
TBLPTR              =    0x00A357
```

<u>Example2</u>:   TBLRD +* ;

Before Instruction

```
TABLAT              =    0xAA
TBLPTR              =    0x01A357
MEMORY(0x01A357)    =    0x12
MEMORY(0x01A358)    =    0x34
```

After Instruction

```
TABLAT              =    0x34
TBLPTR              =    0x01A358
```

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