HILEVEL Technology, Inc. Q'n Apps #S8

Q: How can I loop until I get a "MATCH" on my vectors?

Pattern Matching with Symphony

To begin, employ the program mode (invoked by selecting **Programmed** under **Run Setup**). The objective is to run the vectors in loops until the desired outputs are obtained by matching them to the expected response data by using the "Fail" flag of the tester.

Start by filling the entire program space with NOOPôs. This you do by pulling down the **Vector** drawer and selecting **Program Fill + NOOP + Fill It**. Did you notice how quickly it filled? That's **HiLevel**'s HRISC processor at work!

Consider the following vector segment:

```
                T    C
                S    L
                T    K
000 RSET        X 00 0 XXXX 0 0 10 00A1 1
001 CTRG        X 11 0 XXXX 0 0 10 BF00 1
002 NOOP        X 10 0 XXXX 0 0 10 BF00 1
003 NOOP        X 00 0 XXXX 0 0 10 BF00 1
004 NOOP        X 00 0 XXXX 0 0 10 BF00 1
005 NOOP        X 00 1 XXXX 0 0 10 BF00 1
006 NOOP        L 00 1 XXXX 0 0 10 BF00 1
007 NOOP        X 00 0 XXXX 0 0 10 BF00 1
008 NOOP        X 00 0 XXXX 0 0 10 BF00 1
009 NOOP        X 00 0 XXXX 0 0 10 BF00 1
00A CJMP 001    X 00 0 XXXX 0 0 10 BF00 1
00B NOOP        X 00 0 XXXX 0 0 10 BF00 1
00C NOOP        X 00 0 XXXX 0 0 10 BF00 1
00D NOOP        L 00 0 AXXX 0 0 10 BF00 1
00E NOOP        L 00 1 AXXX 0 0 10 BF00 1
00F NOOP        L 00 0 AXXX 0 0 10 BF00 1
010 NOOP        L 00 1 AXXX 0 0 10 BF00 1
011 NOOP        L 00 0 AXXX 0 0 10 BF00 1
012 NOOP        L 00 1 AXXX 0 0 10 BF00 1
013 NOOP        L 00 0 AXXX 0 0 10 BF00 1
014 NOOP        H 11 1 AXXX 0 0 10 BF00 1
015 NOOP        H 00 0 XXXX 1 1 11 0000 1
```

Vector example for Pattern Matching

For our example, it is assumed that the TST pin is high at the start of the vectors. The first 12 (HEX C) vectors are the ñdata matchò vectors. We are waiting for TST to change from a high to a low. Only at vectors five and six is the part clocked, and only there are we watching for the transition on TST. All other output pins in the ñvector 1 to vector 10ò loop are masked so that no false errors will interfere with the match. The Programmable Pattern Generator will run to Vector 10 (HEX A) and test if there are any failures; if failures are present the program jumps back to vector 1, where a Clear Trigger (CTRG) instruction is executed to clear the failure. It will stay in this loop until there are no failures. In other words, until there is a match. At Vector 10 (HEX A), if there are no failures, it will fall out of the loop. This will now allow the program to continue to look for other failures.

For complete information about the Program Mode, refer to the latest release of the Symphony User Manual. Learn to make CALLs to subroutines, repeat a single vector and to use other vector addressing commands. QôsnApps are created when we add new features, so be sure to check our website often for updates.

Also See:
Q'nApp #S7: Simple Patgen looping
Q'nApp #S32: Symbolic Addressing Mode
Q'nApp #S33: MASK and UNMSK
Q'nApp #S39: "PRG" file attachment to SET file