Q'n Apps #P33

Q: Can vectors be masked from the Analysis capture?
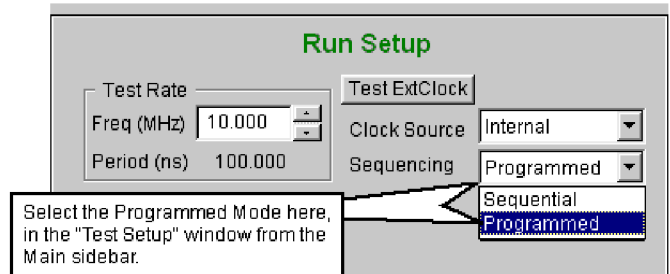
MASK and UNMSK

When using the various looping functions of the programmable pattern generator, vector addresses may be repeated many times. Consequently, the acquisition of executed vectors during a RUN collects data for each of these events, meaning that a loop or repeat of thousands of vectors will occupy much more Analysis RAM than Vector RAM.

Presto gives you the power to conserve Analysis memory with the MASK and UNMSK commands. These functions are defined in the Program field of the Vectors window. Clearly, you must be operating in the Programmed rather than Sequential mode as shown to the upper right.

In the Vectors window shown to the right we see a pattern generator program defined to repeat vector 7 four times (the LOAD value plus one). Your actual program may have a LOAD value of hundreds or thousands, or you might use the CJMP instruction to loop through a series of vectors many times. But the MASK feature works the same in any instance.

Executing our vectors by clicking the RUN button or by pressing the button on the TestBox will yield a capture in the Analysis window similar to the example at the right. Note the four captures of vector 7.

To use the MASK function, go back to the Vectors window and place the text cursor in the Program field. Enter the command õMASKö at the vector preceding the LOAD instruction. Also enter an UNMSK command at the vector immediately following the LOOP. See the example to the right.

Vector Address (Dec)	Program	MMMM EEEE MMMM PPPP 0123
0	NOOP	L000
1	NOOP	L000
2	NOOP	L000
3	NOOP	L000
4	MASK	L000
5	LOAD 00003	L000
6	DEC	L000
7	LOOP@	L000
8	UNMSK	L000
9	NOOP	L000

MASK & UNMSK inserted in the Vectors window

A view of the Analysis window after again clicking RUN shows us that the MASKed vector ranges are excluded from the capture, as shown to the right. This not only conserves Analysis memory, but can make viewing and managing your test results easier by excluding redundant õuninterestingö vectors from the capture.

Vector Address (Dec)	Program	MMMM EEEE MMMM PPPP 0123
0	NOOP	L000
1	NOOP	L000
2	NOOP	L000
3	NOOP	L000
4	MASK	L000
9	NOOP	L000
10	NOOP	L000
11	NOOP	L000
12	NOOP	L000

Analysis capture excludes masked vectors 5,6,7 & 8

Related info

Q'nApp #P7: Pattern Generator Looping
Q'nApp #P11: TestBox
Q'nApp #P39: PRG Attachment to SET file