Ethernet Interrupt Times

IRM diagnostic record

Mon, Nov 10, 1997

This note describes a simple diagnostic for network interrupt times that has been added to the IRM system code. A short record is written into a circular buffer for each frame that is received or transmitted. The current location of this diagnostic circular buffer is $4C00–4FFF, with room for 128 entries of 8 bytes each. Here is the structure of each entry:

Field	*#words*	*Function*
`eStat`	1	status word from SCB updated by ethernet controller
`cycle`	1	low word of system cycle counter (10–15 Hz)
`hmsOff`	1	offset time from start of this cycle in half milliseconds
`usTime`	1	length of interrupt routine execution in microsec

The `eStat` field identifies the kind of interrupt—receive or transmit. The `cycle` counter identifies in which cycle the interrupt occurred. The `hmsOff` value indicates when within that cycle the interrupt occurred. Finally, the interrupt execution time is in μs.

Typical transmit (`eStat` = $2040) interrupt times are 30 μs.
Typical receive (`eStat` = $4040) interrupt times are 30–50 μs.

```
N MEMORY DUMP     11/10/97 1502
0562:004C00 2040 C3AE 0005 001E
0562:004C08 4040 C3AF 0001 0034
0562:004C10 4040 C3AF 0003 001A
0562:004C18 2040 C3AF 0006 001D
0562:004C20 4040 C3AF 002A 001B
0562:004C28 4040 C3AF 0079 0017
0562:004C30 2040 C3B0 0005 0027
0562:004C38 2040 C3B1 0005 001E
0562:004C40 2040 C3B2 0005 0021
0562:004C48 4040 C3B2 0044 001A
0562:004C50 2040 C3B3 0005 001F
0562:004C58 2040 C3B4 0005 001F
0562:004C60 2040 C3B5 0005 001D

N MEMORY DUMP     11/10/97 1517
0562:004C00 4040 F808 0047 0036
0562:004C08 4040 F809 0047 0039
0562:004C10 4040 F809 0070 0034
0562:004C18 4040 F80A 0047 0036
0562:004C20 4040 F80B 0047 0035
0562:004C28 4040 F80C 0002 001C
0562:004C30 4040 F80C 0047 0036
0562:004C38 4040 F80D 0047 0036
0562:004C40 4040 F80E 0047 0034
0562:004C48 4040 F80F 0047 0038
0562:004C50 4040 F810 0047 0034
0562:004C58 4040 F811 002C 001B
0562:004C60 4040 F811 0047 0030
0562:004C68 4040 F811 004E 001C
```