

**Intel Corporation**  
Memory Components Div.  
1900 Prairie City Rd.  
Folsom, CA 95630  
Mail Stop: FM3-83



**Needhams Electronics**  
4630 Beloit Drive #20  
Sacramento, CA 95838

REF: **Intel and Needhams Electronics Test Services Agreement dated 10/30/95**

Dear PROM Programmer Vendor:

I am pleased to inform **Needhams Electronics** that your PROM programming hardware and software has passed PROM programmer testing by the Memory Components Division (MCD). PROM programmer testing was conducted by MCD under the following test parameters:

|                             |                            |
|-----------------------------|----------------------------|
| <b>PROM PROGRAMMER:</b>     | <b>EMP20</b>               |
| <b>PROGRAMMER SOFTWARE:</b> | <b>2.90</b>                |
| <b>HARDWARE TESTED:</b>     | Attached in <b>Table 1</b> |

MCD's PROM Programmer testing consists of functional tests of Intel Flash memory products on the specified hardware and software programming platform. MCD tests the functionality of Flash erase, data program, and data read algorithms using multiple data patterns. The results of this PROM programmer testing are contained in the attached **Table 1 PROM Programmer Test Report**

When **Needhams Electronics** releases Flash related PROM programmer revisions, please provide these revisions to MCD and we will test these new algorithms. Thank you for your participation in this value added program.

Sincerely yours,

Peter T. Larsen  
MCD Testing Lab, Manager

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**Table 1**  
**PROM Programmer Test Report**

**Intel Flash memory products that passed PROM programmer testing using Needhams Electronics EMP20 2.90 PROM programmer hardware and software:**

| <b>PART NUMBER</b> | <b>MODULE</b>     | <b>SOCKET</b>            | <b>SOCKET</b>             |
|--------------------|-------------------|--------------------------|---------------------------|
| <b>Fast Flash:</b> | <b>CIC PART #</b> | <b>OR NEEDHAM'S</b>      |                           |
|                    |                   | <b>WHERE APPLICABLE</b>  |                           |
| E28F016XS          | 01B               | B56                      |                           |
| DA28F016XS         | 01B               | 56SS-40D-B6-TI           | 56-40-02SS-6TI            |
| E28F016XD          | 01B               | C56                      |                           |
| <b>FlashFile™:</b> |                   |                          |                           |
| DD28F032SA         | 01B               | 56TS-40D-C6-YAM-S (REV2) | 56-40-03TS-6YAM-S (REV B) |
| DA28F016SA         | 01B               | 56SS-40D-A6-TI           | 56-40-01SS-6TI            |
| E28F016SA          | 01B               | 56TS-40D-C6-YAM-S (REV2) | 56-40-03TS-6YAM-S (REV B) |
| DA28F016SV         | 01B               | 56SS-40D-A6-TI           | 56-40-01SS-6TI            |
| E28F016SV          | 01B               | 56TS-40D-C6-YAM-S (REV2) | 56-40-03TS-6YAM-S (REV B) |
| E28F008SA          | 01B               | 40TS-40D-A6-YAM-S        | 40-40-01TS-6YAM-S         |
| F28F008SA          | 01B               | 40TS-40D-A6-YAM-R        | 40-40-01TS-6YAM-R         |
| PA28F008SA         | 01B               | 40PS-40D-A6-YAM          | 44-40-03S-6YAM            |
| E28F008SA-L        | 01B               | 40TS-40D-A6-YAM-S        | 40-40-01TS-6YAM-S         |
| F28F008SA-L        | 01B               | 40TS-40D-A6-YAM-R        | 40-40-01TS-6YAM-R         |
| PA28F008SA-L       | 01B               | 40PS-40D-A6-YAM          | 44-40-03S-6YAM            |
| <b>BootBlock:</b>  |                   |                          |                           |
|                    | <b>MODULE</b>     | <b>SOCKET</b>            | <b>SOCKET</b>             |
| E28F400BL-T        | 01B               | A56                      |                           |
| E28F400BL-B        | 01B               | A56                      |                           |
| E28F400BX-T        | 01B               | A56                      |                           |
| E28F400BX-B        | 01B               | A56                      |                           |
| E28F200BL-T        | 01B               | A56                      |                           |
| E28F200BL-B        | 01B               | A56                      |                           |
| E28F200BX-T        | 01B               | A56                      |                           |
| E28F200BX-B        | 01B               | A56                      |                           |
| PA28F400BL-T       | 01B               | C44                      |                           |
| PA28F400BL-B       | 01B               | C44                      |                           |
| PA28F400BX-T       | 01B               | C44                      |                           |
| PA28F400BX-B       | 01B               | C44                      |                           |
| PA28F200BL-T       | 01B               | C44                      |                           |
| PA28F200BL-B       | 01B               | C44                      |                           |
| PA28F200BX-T       | 01B               | C44                      |                           |
| PA28F200BX-B       | 01B               | C44                      |                           |
| E28F004BL-T        | 01B               | A40                      |                           |
| E28F004BL-B        | 01B               | A40                      |                           |
| E28F004BX-T        | 01B               | A40                      |                           |
| E28F004BX-B        | 01B               | A40                      |                           |
| E28F002BL-T        | 01B               | A40                      |                           |
| E28F002BL-B        | 01B               | A40                      |                           |
| E28F002BX-T        | 01B               | A40                      |                           |
| E28F002BX-B        | 01B               | A40                      |                           |
| E28F001BX-T        | 01A               | 32TS-32D-A6-ENP-S        | 32-32-01TS-6YAM-S         |
| E28F001BX-B        | 01A               | 32TS-32D-A6-ENP-S        | 32-32-01TS-6YAM-S         |
| N28F001BX-T        | 01A               | PD32                     |                           |
| N28F001BX-B        | 01A               | PD32                     |                           |
| P28F001BX-T        | 01A               | N/A                      |                           |
| P28F001BX-B        | 01A               | N/A                      |                           |

| SmartVoltage          | BootBlock | MODULE | SOCKET            | SOCKET            |
|-----------------------|-----------|--------|-------------------|-------------------|
| E28F400BV-T           |           | 01B    | A56               |                   |
| E28F400BV-B           |           | 01B    | A56               |                   |
| E28F200BV-T           |           | 01B    | A56               |                   |
| E28F200BV-B           |           | 01B    | A56               |                   |
| E28F400CV-T           |           | 01B    | A48/B48           |                   |
| E28F400CV-B           |           | 01B    | A48/B48           |                   |
| E28F200CV-T           |           | 01B    | A48/B48           |                   |
| E28F200CV-B           |           | 01B    | A48/B48           |                   |
| PA28F400BV-T          |           | 01B    | C44               |                   |
| PA28F400BV-B          |           | 01B    | C44               |                   |
| PA28F200BV-T          |           | 01B    | C44               |                   |
| PA28F200BV-B          |           | 01B    | C44               |                   |
| E28F004BV-T           |           | 01B    | A40               |                   |
| E28F004BV-B           |           | 01B    | A40               |                   |
| E28F002BV-T           |           | 01B    | A40               |                   |
| E28F002BV-B           |           | 01B    | A40               |                   |
| Bulk Erase Components |           | MODULE | SOCKET            | SOCKET            |
| E28F020               |           | 01A    | 32TS-32D-A6-ENP-S | 32-32-01TS-6YAM-S |
| F28F020               |           | 01A    | 32TS-32D-A6-ENP-R | 32-32-01TS-6YAM-R |
| N28F020               |           | 01A    | PD32              |                   |
| P28F020               |           | 01A    | N/A               |                   |
| E28F010               |           | 01A    | 32TS-32D-A6-ENP-S | 32-32-01TS-6YAM-S |
| F28F010               |           | 01A    | 32TS-32D-A6-ENP-R | 32-32-01TS-6YAM-R |
| N28F010               |           | 01A    | PD32              |                   |
| P28F010               |           | 01A    | N/A               |                   |
| N28F512               |           | 01A    | PD32              |                   |
| P28F512               |           | 01A    | N/A               |                   |
| N28F256A              |           | 01A    | PD32              |                   |
| P28F256A              |           | 01A    | N/A               |                   |

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