

## **Suggested Magnetics**

### **1 General Description**

It is the purpose of this document to provide a list of suggested magnetics for use with the SMSC LAN family of products. The manufacturer, part number, package, number of cores, operating temperature range, and configuration are included for each suggested magnetic. Each product family table is categorized into “Qualified Magnetics” and “Suggested Magnetics” as defined below:

### **2 Qualified Magnetics**

Magnetics listed under this heading have been tested in order to verify proper operation with the specific SMSC device listed with it. The testing accomplished has been either formal UNH 100BASE-TX PMD testing, UNH 10BASE-T MAU testing and/or in-house testing performed by SMSC. The designer can assume with a high degree of confidence, that with proper PCB design techniques, the combinations of SMSC devices and magnetics presented in this category will perform to the highest standards.

### **3 Suggested Magnetics**

Magnetics listed under this heading have **not** been tested in order to verify proper operation with the specific SMSC device listed with it. This category of magnetic has been evaluated by the contents of the vendor supplied datasheet and legacy performance only. However, the designer can assume with some degree of confidence, that with proper PCB design techniques, the combinations of SMSC devices and magnetics presented in this category will perform to high standards. Magnetics in this category have been targeted for future Qualification Testing. Magnetics in this category may or may not advance to the Qualified Magnetics category. It is important to note, there is the remote possibility that a Suggested Magnetic, upon failing Qualification Testing, may be removed from the Suggested Magnetic category at any time by SMSC.

|   |                    |                 |              |             |                      |
|---|--------------------|-----------------|--------------|-------------|----------------------|
| <b>LAN8187, LAN8700, LAN8710, LAN8720, LAN9131, LAN9132, LAN9210, LAN9211, LAN9215, LAN9217, LAN9218, LAN9220, LAN9221, LAN9303, LAN9303M, LAN9311, LAN9312, LAN9313, LAN9420, LAN9500, LAN9500A, LAN9512, LAN9513, LAN9514</b> |                    |                 |              |             |                      |
| <b>Qualified Magnetics</b>  |                    |                 |              |             |                      |
| <b>Vendor</b>   | <b>Part Number</b> | <b>Package</b>  | <b>Cores</b> | <b>Temp</b> | <b>Configuration</b> |
| <b>Pulse</b>  | H1102              | 16-pin SOIC     | 4            | 0° - +70° C | HP Auto-MDIX         |
| <b>Halo</b>   | TG110-RP55N5       | 16-pin SOIC     | 4            | 0° - +70° C | HP Auto-MDIX         |
| <b>Halo</b>   | HFJ11-RP26E-L12RL  | Integrated RJ45 | 4            | 0° - +70° C | HP Auto-MDIX POE     |
| <b>Delta</b>  | RJSE1R5310A        | Integrated RJ45 | 4            | 0° - +70° C | HP Auto-MDIX         |
| <b>Suggested Magnetics</b>  |                    |                 |              |             |                      |
| <b>Pulse</b>  | J0011D01B          | Integrated RJ45 | 4            | 0° - +70° C | HP Auto-MDIX         |
| <b>Midcom</b>   | 000-7219-35        | Cardbus         | 4            | 0° - +70° C | HP Auto-MDIX         |
| <b>Bothhand</b>   | TS6121C            | 16-pin SOIC     | 4            | 0° - +70° C | HP Auto-MDIX         |
| <b>Bothhand</b>   | LU1S041X-43        | Integrated RJ45 | 4            | 0° - +70° C | HP Auto-MDIX         |

|   |                    |                 |              |               |                      |
|---|--------------------|-----------------|--------------|---------------|----------------------|
| <b>LAN8187i, LAN8700i, LAN8710i, LAN8720i, LAN9215i, LAN9218i, LAN9221i, LAN9303i, LAN9303Mi, LAN9311i, LAN9313i, LAN9420i, LAN9500i, LAN9500Ai, LAN9512i, LAN9513i, LAN9514i</b> |                    |                 |              |               |                      |
| <b>Qualified Magnetics</b>  |                    |                 |              |               |                      |
| <b>Vendor</b>   | <b>Part Number</b> | <b>Package</b>  | <b>Cores</b> | <b>Temp</b>   | <b>Configuration</b> |
| <b>Pulse</b>  | HX1188             | 16-pin SOIC     | 4            | -40° - +85° C | HP Auto-MDIX         |
| <b>Halo</b>   | TG110-RPE5N5       | 16-pin SOIC     | 4            | -40° - +85° C | HP Auto-MDIX         |
| <b>Halo</b>   | HFJ11-RPE26E-L12RL | Integrated RJ45 | 4            | -40° - +85° C | HP Auto-MDIX POE     |
| <b>TDK</b>  | TLA-6T717W         | Integrated RJ45 | 4            | -40° - +85° C | HP Auto-MDIX         |
| <b>Delta</b>  | LFE8505T           | 16-pin SOIC     | 4            | -40° - +85° C | HP Auto-MDIX         |
| <b>Suggested Magnetics</b>  |                    |                 |              |               |                      |
| <b>Midcom</b>   | 000-7090-37R       | 16-pin SOIC     | 4            | -40° - +85° C | HP Auto-MDIX         |

|                         |                    |                 |   |               |                     |
|-------------------------|--------------------|-----------------|---|---------------|---------------------|
| <b>Midcom</b>           | MIC66211-5171T-LF3 | Integrated RJ45 | 4 | -40° - +85° C | HP Auto-MDIX<br>POE |
|                         |                    |                 |   |               |                     |
| <b>Elec &amp; Eltek</b> | 820-M0323R         | 16-pin SOIC     | 4 | -40° - +85° C | HP Auto-MDIX        |

|                                  |                    |                 |              |             |                      |
|----------------------------------|--------------------|-----------------|--------------|-------------|----------------------|
| <b>LAN8810, LAN8820, LAN7500</b> |                    |                 |              |             |                      |
| <b>Qualified Magnetics</b>       |                    |                 |              |             |                      |
| <b>Vendor</b>                    | <b>Part Number</b> | <b>Package</b>  | <b>Cores</b> | <b>Temp</b> | <b>Configuration</b> |
| <b>Halo</b>                      | HFJ11-1G02E        | Integrated RJ45 | 8            | 0° - +70° C | HP Auto-MDIX         |
| <b>Suggested Magnetics</b>       |                    |                 |              |             |                      |
| <b>Halo</b>                      | TG1G-S002NZRL      | 24-pin SOIC-W   | 8            | 0° - +70° C | HP Auto-MDIX         |

|                                     |                    |                |              |               |                      |
|-------------------------------------|--------------------|----------------|--------------|---------------|----------------------|
| <b>LAN8810i, LAN8820i, LAN7500i</b> |                    |                |              |               |                      |
| <b>Suggested Magnetics</b>          |                    |                |              |               |                      |
| <b>Vendor</b>                       | <b>Part Number</b> | <b>Package</b> | <b>Cores</b> | <b>Temp</b>   | <b>Configuration</b> |
| <b>Halo</b>                         | TG1G-E012NZRL      | 24-pin SOIC-W  | 8            | -40° - +85° C | HP Auto-MDIX         |

|                                     |                    |                |              |                |                      |
|-------------------------------------|--------------------|----------------|--------------|----------------|----------------------|
| <b>LAN88710, LAN89218, LAN89303</b> |                    |                |              |                |                      |
| <b>Suggested Magnetics</b>          |                    |                |              |                |                      |
| <b>Vendor</b>                       | <b>Part Number</b> | <b>Package</b> | <b>Cores</b> | <b>Temp</b>    | <b>Configuration</b> |
| <b>Halo</b>                         | TG110-AE050N5      | 16-pin SOIC    | 4            | -40° - +85° C  | HP Auto-MDIX         |
| <b>Halo</b>                         | TG110-AEX50N5LF    | 16-pin SOIC    | 4            | -40° - +125° C | HP Auto-MDIX         |

|  |                    |                |              |             |                      |
|--|--------------------|----------------|--------------|-------------|----------------------|
| <b>LAN83C185, LAN9115, LAN9116, LAN9117, LAN9118</b> |                    |                |              |             |                      |
| <b>Qualified Magnetics</b>                           |                    |                |              |             |                      |
| <b>Vendor</b>  | <b>Part Number</b> | <b>Package</b> | <b>Cores</b> | <b>Temp</b> | <b>Configuration</b> |
| <b>Bel Fuse</b>                                      | S558-5999-46       | 16-pin SOP     | 5            | 0° - +70° C | 10/100 Legacy        |
|  |                    |                |              |             |                      |
| <b>Elec &amp; Eltek</b>                              | 820-00278H         | 16-pin SOP     | 5            | 0° - +70° C | 10/100 Legacy        |

| LAN83C185, LAN9115, LAN9116, LAN9117, LAN9118 |              |            |       |   |               |
|---|--------------|------------|-------|---|---------------|
| Suggested Magnetics                           |              |            |       |   |               |
| Vendor  | Part Number  | Package    | Cores | Temp                                      | Configuration |
| Pulse   | H1086        | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| Pulse   | H1012        | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| Pulse   | H1138        | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| Pulse   | PE-68515L    | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| Pulse   | H1089        | 16-pin SOP | 4     | 0° - +70° C                               | 10/100 Legacy |
| Pulse (Valor)                                 | ST6118T      | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
|   |              |            |       |   |               |
| Halo  | TG22-3506NL  | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| Halo  | TG22-3506ND  | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
|   |              |            |       |   |               |
| Midcom  | 000-6241-37R | 16-pin SOP | 5     | -40° - +85° C<br><a href="#">Note 3.1</a> | 10/100 Legacy |
| Midcom  | 000-6181-37R | 16-pin SOP | 5     | -40° - +85° C<br><a href="#">Note 3.1</a> | 10/100 Legacy |
|   |              |            |       |   |               |
| YCL   | 20PMT04      | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| YCL   | PT163035     | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
|   |              |            |       |   |               |
| Transpower (Coev)                             | HB614        | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| Transpower (Coev)                             | HB614-LP     | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
|   |              |            |       |   |               |
| XFMR5   | XFATM6       | 16-pin SOP | 5     | -40° - +85° C<br><a href="#">Note 3.1</a> | 10/100 Legacy |
|   |              |            |       |   |               |
| TDK   | TLA-6T103    | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
| TDK   | TLA-6T103LF  | 16-pin SOP | 5     | 0° - +70° C                               | 10/100 Legacy |
|   |              |            |       |   |               |
| Delta   | LF8200M      | 16-pin SOP | 5     | +25° C                                    | 10/100 Legacy |

| LAN91C111           |              |                 |       |             |               |
|---------------------|--------------|-----------------|-------|-------------|---------------|
| Qualified Magnetics |              |                 |       |             |               |
| Vendor              | Part Number  | Package         | Cores | Temp        | Configuration |
| Pulse               | J1012F21C    | Integrated RJ45 | 4     | 0° - +70° C | 10/100 Legacy |
|                     |              |                 |       |             |               |
| Halo                | TG110-S050N2 | 16-pin SOIC     | 4     | 0° - +70° C | HP Auto-MDIX  |

| LAN91C111           |               |                 |       |                           |                |
|---------------------|---------------|-----------------|-------|---------------------------|----------------|
| Suggested Magnetics |               |                 |       |                           |                |
| Vendor              | Part Number   | Package         | Cores | Temp                      | Configuration  |
| Bel Fuse            | S558-5999-U7  | 16-pin SOIC     | 4     | 0° - +70° C               | HP Auto-MDIX   |
| Bel Fuse            | 0810-1X1T-03  | Integrated RJ45 | 5     | 0° - +70° C               | 10/100 Legacy  |
| Bel Fuse            | 0817-1G1T-21  | Integrated RJ45 | 4     | 0° - +70° C               | HP Auto-MDIX   |
|                     |               |                 |       |                           |                |
| Pulse               | H1086         | 16-pin SOP      | 5     | 0° - +70° C               | 10/100 Legacy  |
| Pulse               | H1012         | 16-pin SOP      | 5     | 0° - +70° C               | 10/100 Legacy  |
| Pulse               | PE-68515L     | 16-pin SOP      | 5     | 0° - +70° C               | 10/100 Legacy  |
| Pulse               | H1089         | 16-pin SOP      | 4     | 0° - +70° C               | 10/100 Legacy  |
| Pulse (Valor)       | ST6118T       | 16-pin SOP      | 5     | 0° - +70° C               | 10/100 Legacy  |
| Pulse               | H1102         | 16-pin SOIC     | 4     | 0° - +70° C               | HP Auto-MDIX   |
| Pulse               | J1012F01C     | Integrated RJ45 | 4     | 0° - +70° C               | 10/100 Legacy  |
|                     |               |                 |       |                           |                |
| Halo                | TG22-3506NL   | 16-pin SOP      | 5     | 0° - +70° C               | 10/100 Legacy  |
| Halo                | TG22-3506ND   | 16-pin SOP      | 5     | 0° - +70° C               | 10/100 Legacy  |
| Halo                | TG110-S055N2  | 16-pin SOIC     | 4     | 0° - +70° C               | HP Auto-MDIX   |
| Halo                | TG110-S050P1  | CardBus         | 2     | 0° - +70° C               | Single Channel |
| Halo                | TG110-S050P2  | CardBus         | 4     | 0° - +70° C               | HP Auto-MDIX   |
| Halo                | TG110-S050J2  | CardBus         | 4     | 0° - +70° C               | HP Auto-MDIX   |
|                     |               |                 |       |                           |                |
| Midcom              | 000-6241-37R  | 16-pin SOP      | 5     | -40° - +85° C<br>Note 3.1 | 10/100 Legacy  |
| Midcom              | 000-6181-37R  | 16-pin SOP      | 5     | -40° - +85° C<br>Note 3.1 | 10/100 Legacy  |
| Midcom              | JFM24111-0101 | Integrated RJ45 | 4     | 0° - +70° C               | HP Auto-MDIX   |

| LAN91C111           |             |             |       |             |               |
|---------------------|-------------|-------------|-------|-------------|---------------|
| Suggested Magnetics |             |             |       |             |               |
| Vendor              | Part Number | Package     | Cores | Temp        | Configuration |
| YCL                 | 20PMT04     | 16-pin SOP  | 5     | 0° - +70° C | 10/100 Legacy |
| YCL                 | PH163112    | 16-pin SOIC | 4     | +25° C      | HP Auto-MDIX  |
| PCA                 | EPF8033GM   | 16-pin SOP  | 5     | 0° - +70° C | 10/100 Legacy |
| PCA                 | EPF8143S    | 16-pin SOIC | 4     | 0° - +70° C | HP Auto-MDIX  |
| Tamura              | TTC-8139    | 16-pin SOIC | 4     | 0° - +70° C | HP Auto-MDIX  |

| LAN91C111I          |              |             |       |               |               |
|---------------------|--------------|-------------|-------|---------------|---------------|
| Suggested Magnetics |              |             |       |               |               |
| Vendor              | Part Number  | Package     | Cores | Temp          | Configuration |
| Pulse               | HX1188       | 16-pin SOIC | 4     | -40° - +85° C | HP Auto-MDIX  |
| Pulse               | HX1198       | 16-pin SOIC | 4     | -40° - +85° C | HP Auto-MDIX  |
| Halo                | TG110-E050N5 | 16-pin SOIC | 4     | -40° - +85° C | HP Auto-MDIX  |
| Halo                | TG110-E055N5 | 16-pin SOIC | 4     | -40° - +85° C | HP Auto-MDIX  |

| LAN91C96 @ +5V OPERATION |              |             |       |             |                |
|--------------------------|--------------|-------------|-------|-------------|----------------|
| Suggested Magnetics      |              |             |       |             |                |
| Vendor                   | Part Number  | Package     | Cores | Temp        | Configuration  |
| Bel Fuse                 | 0556-3873-03 | 16-pin DIL  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Bel Fuse                 | A556-2006-00 | 16-pin DIL  | 3     | 0° - +70° C | 10BASE-T (LPF) |
| Bel Fuse                 | A556-2006-03 | 16-pin DIL  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Bel Fuse                 | A556-2006-DE | 16-pin DIL  | 2     | 0° - +70° C | 10BASE-T (LPF) |
| Bel Fuse                 | S556-5999-02 | 16-pin SOP  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Bel Fuse                 | S556-5999-DE | 16-pin SOP  | 2     | 0° - +70° C | 10BASE-T (LPF) |
| Bel Fuse                 | A553-1006-AB | 16-pin DIL  | 3     | 0° - +70° C | 10BASE2 & 5    |
| Bel Fuse                 | S553-1006-AE | 16-pin SOIC | 3     | 0° - +70° C | 10BASE2 & 5    |
| Bel Fuse                 | S556-9003-11 | PCMCIA      | 4     | 0° - +70° C | 10BASE-T (LPF) |

| LAN91C96 @ +5V OPERATION |             |             |       |             |                |
|--------------------------|-------------|-------------|-------|-------------|----------------|
| Suggested Magnetics      |             |             |       |             |                |
| Vendor                   | Part Number | Package     | Cores | Temp        | Configuration  |
| Pulse                    | PE-65421    | 16-pin DIL  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse                    | PE-68026    | 16-pin SOP  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse                    | PE-68011    | 16-pin SOP  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse                    | PE-68056    | 16-pin SOP  | 3     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse                    | PE-64103    | 16-pin DIL  | 3     | 0° - +70° C | 10BASE2        |
| Pulse                    | PE-64108    | 16-pin DIL  | 3     | 0° - +70° C | 10BASE2 & 5    |
| Pulse                    | PE-65728    | 16-pin SOIC | 3     | 0° - +70° C | 10BASE2 & 5    |
| Pulse (Fil Mag)          | 78Z034C     | 16-pin DIL  | 3     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse (Fil Mag)          | 78Z1120B-01 | 16-pin DIL  | 2     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse (Fil Mag)          | 78Z1122B-01 | 16-pin DIL  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Pulse (Fil Mag)          | 23Z91SM     | 16-pin SOIC | 3     | 0° - +70° C | 10BASE2 & 5    |
| Pulse (Valor)            | FL1012      | 16-pin DIL  | 3     | +25° C      | 10BASE-T (LPF) |
| Pulse (Valor)            | PT3877      | 16-pin DIL  | 2     | +25° C      | 10BASE-T (LPF) |
|                          |             |             |       |             |                |
| Halo                     | FD02-101G   | 16-pin DIL  | 2     | 0° - +70° C | 10BASE-T (LPF) |
| Halo                     | FD12-101G   | 16-pin DIL  | 3     | 0° - +70° C | 10BASE-T (LPF) |
| Halo                     | FD22-101G   | 16-pin DIL  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Halo                     | TD01-1006K  | 16-pin DIL  | 3     | +25° C      | 10BASE2 & 5    |
| Halo                     | TD01-1006B  | 16-pin DIL  | 3     | +25° C      | 10BASE2 & 5    |
| Halo                     | TG01-1006N  | 16-pin SOIC | 3     | +25° C      | 10BASE2 & 5    |
| Halo                     | TG01-1006P  | PCMCIA      | 3     | +25° C      | 10BASE2 & 5    |
|                          |             |             |       |             |                |
| YCL                      | 20F001N     | 16-pin DIL  | 3     | +25° C      | 10BASE-T (LPF) |
| YCL                      | 20F001      | 16-pin DIL  | 2     | +25° C      | 10BASE-T (LPF) |
| YCL                      | 20LF43      | 16-pin SOP  | 4     | +25° C      | 10BASE-T (LPF) |
| YCL                      | 20LF43S     | 16-pin SOP  | 4     | +25° C      | 10BASE-T (LPF) |
| YCL                      | 16PT-006A   | 16-pin DIL  | 3     | +25° C      | 10BASE2 & 5    |
| YCL                      | 16PT-004A   | 16-pin DIL  | 3     | +25° C      | 10BASE2 & 5    |
| YCL                      | 16PT-006S   | 16-pin SOIC | 3     | +25° C      | 10BASE2 & 5    |
|                          |             |             |       |             |                |
| PCA                      | EPE6192G    | 16-pin SOP  | 4     | 0° - +70° C | 10BASE-T (LPF) |

| LAN91C96 @ +5V OPERATION |             |             |       |             |                |
|--------------------------|-------------|-------------|-------|-------------|----------------|
| Suggested Magnetics      |             |             |       |             |                |
| Vendor                   | Part Number | Package     | Cores | Temp        | Configuration  |
| PCA                      | EPA1885-5   | 16-pin SOIC | 3     | +25° C      | 10BASE2 & 5    |
| Tamura                   | TTC-8128    | 16-pin SOP  | 4     | 0° - +70° C | 10BASE-T (LPF) |
| Tamura                   | TTC-8121    | 16-pin SOIC | 3     | 0° - +70° C | 10BASE2 & 5    |

| LAN91C96 @ +3.3V OPERATION |             |            |       |             |                |
|----------------------------|-------------|------------|-------|-------------|----------------|
| Qualified Magnetics        |             |            |       |             |                |
| Vendor                     | Part Number | Package    | Cores | Temp        | Configuration  |
| Pulse                      | PE-68056    | 16-pin SOP | 3     | 0° - +70° C | 10BASE-T (LPF) |

| LAN91C96I @ +5V OPERATION |              |            |       |               |                |
|---------------------------|--------------|------------|-------|---------------|----------------|
| Suggested Magnetics       |              |            |       |               |                |
| Vendor                    | Part Number  | Package    | Cores | Temp          | Configuration  |
| Bel Fuse                  | A556-2006-02 | 16-pin DIL | 4     | -40° - +85° C | 10BASE-T (LPF) |
| Pulse                     | EX2001       | 16-pin SOP | 4     | -40° - +85° C | 10BASE-T (LPF) |

**Note 3.1** The LAN83C185, LAN9115, LAN9116, LAN9117, LAN9118, LAN91C111, LAN8187, LAN8700, LAN9210, LAN9211, LAN9215, LAN9217, LAN9218, LAN9131, LAN9132, LAN9311, LAN9312, LAN9313, LAN9420, LAN9500 are rated for the Commercial Temperature (0° - +70° C) range only.



## 4 Application Note Revision History

**Table 4.1 Customer Revision History**

| REVISION LEVEL & DATE   | SECTION/FIGURE/ENTRY | CORRECTION  |
|-------------------------|----------------------|---|
| Rev. 3.0<br>(03-15-10)  | First Table          | Added LAN9303, LAN9303M, LAN9500A, LAN9513  |
|                         | Second Table         | Added LAN9303i, LAN9303Mi, LAN9500Ai, LAN9513i  |
|                         | Third Table          | Added new table for LAN8810, LAN8820, LAN7500 with Halo magnetics                     |
|                         | Fourth Table         | Added new table for LAN8810i, LAN8820i, LAN7500i with Halo magnetics                  |
|                         | Fifth Table          | Moved down to accommodate new tables, added LAN88710, LAN89303, and new Halo magnetic |
| Rev. 2.97<br>(08-21-09) | First Table          | Added LAN9512, LAN9514, LAN8710, LAN8720  |
|                         | Second Table         | Added LAN8710i, LAN8720i  |
|                         | Third Table          | Added new table for LAN89218 with Halo magnetics                                      |



80 ARKAY DRIVE, HAUPPAUGE, NY 11788 (631) 435-6000, FAX (631) 273-3123

Copyright © 2010 SMSC or its subsidiaries. All rights reserved.

Circuit diagrams and other information relating to SMSC products are included as a means of illustrating typical applications. Consequently, complete information sufficient for construction purposes is not necessarily given. Although the information has been checked and is believed to be accurate, no responsibility is assumed for inaccuracies. SMSC reserves the right to make changes to specifications and product descriptions at any time without notice. Contact your local SMSC sales office to obtain the latest specifications before placing your product order. The provision of this information does not convey to the purchaser of the described semiconductor devices any licenses under any patent rights or other intellectual property rights of SMSC or others. All sales are expressly conditional on your agreement to the terms and conditions of the most recently dated version of SMSC's standard Terms of Sale Agreement dated before the date of your order (the "Terms of Sale Agreement"). The product may contain design defects or errors known as anomalies which may cause the product's functions to deviate from published specifications. Anomaly sheets are available upon request. SMSC products are not designed, intended, authorized or warranted for use in any life support or other application where product failure could cause or contribute to personal injury or severe property damage. Any and all such uses without prior written approval of an Officer of SMSC and further testing and/or modification will be fully at the risk of the customer. Copies of this document or other SMSC literature, as well as the Terms of Sale Agreement, may be obtained by visiting SMSC's website at <http://www.smSC.com>. SMSC is a registered trademark of Standard Microsystems Corporation ("SMSC"). Product names and company names are the trademarks of their respective holders.

**SMSC DISCLAIMS AND EXCLUDES ANY AND ALL WARRANTIES, INCLUDING WITHOUT LIMITATION ANY AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND AGAINST INFRINGEMENT AND THE LIKE, AND ANY AND ALL WARRANTIES ARISING FROM ANY COURSE OF DEALING OR USAGE OF TRADE. IN NO EVENT SHALL SMSC BE LIABLE FOR ANY DIRECT, INCIDENTAL, INDIRECT, SPECIAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES; OR FOR LOST DATA, PROFITS, SAVINGS OR REVENUES OF ANY KIND; REGARDLESS OF THE FORM OF ACTION, WHETHER BASED ON CONTRACT; TORT; NEGLIGENCE OF SMSC OR OTHERS; STRICT LIABILITY; BREACH OF WARRANTY; OR OTHERWISE; WHETHER OR NOT ANY REMEDY OF BUYER IS HELD TO HAVE FAILED OF ITS ESSENTIAL PURPOSE, AND WHETHER OR NOT SMSC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.**