SIO1036

# Super I/O with LPC Interface with FIR and Consumer IR Support

## PRODUCT FEATURES

**Data Brief**

- 3.3 Volt Operation (5V tolerant)
- GPIOs (1)
- XNOR Chain
- PC99a, PC2001
- 36-pin QFN Lead-free RoHS Compliant Package
- Intelligent Auto Power Management
- Infrared Communications Controllers
  - One IR Port
  - Multi-Protocol Serial Communications Controllers
  - IrDA v1.2 (4Mbps), HPSIR, ASKIR, Consumer IR Support
  - Multiple Base I/O Address options, 15 IRQ Options and 3 DMA Options
  - Two Pin Serial Port (UART) Support
- Multi-Mode Parallel Port with ChiProtect™
  - Standard Mode IBM PC/XT®, PC/AT®, and PS/2™ Compatible Bidirectional Parallel Port
  - Enhanced Parallel Port (EPP) Compatible - EPP 1.7 and EPP 1.9 (IEEE 1284 Compliant)
  - IEEE 1284 Compliant Enhanced Capabilities Port (ECP)
  - ChiProtect Circuitry for Protection Against Damage Due to Printer Power-On
  - 192 Base I/O Address, 15 IRQ and 3 DMA Options
- LPC Bus Host Interface
  - Multiplexed Command, Address and Data Bus
  - 8-Bit I/O Transfers
  - 8-Bit DMA Transfers
  - 16-Bit Address Qualification
  - Serial IRQ Interface Compatible with Serialized IRQ Support for PCI Systems
  - PCI CLKRUN# Support

**ORDER NUMBER: SIO1036-ZG FOR 36 PIN, QFN LEAD-FREE ROHS COMPLIANT PACKAGE**

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

# General Description

The SMSC SIO1036 is a 3.3V PC 99, PC2001 compliant Super I/O Controller. The SIO1036 implements the LPC interface, a pin reduced ISA interface which provides the same or better performance as the ISA/X-bus with a substantial savings in pins used. The part also includes 1 GPIO pin.

The SIO1036 incorporates a Multi-Mode parallel port with ChiProtect™ circuitry plus EPP and ECP support. The parallel port is compatible with IBM PC/AT architectures, as well as IEEE 1284 EPP and ECP. The parallel port ChiProtect™ circuitry prevents damage caused by an attached powered printer when the SIO1036 is not powered.

The SIO1036 offers a full 16-bit internally decoded address bus, a Serial IRQ interface with PCI CLKRUN# support, relocatable configuration ports, and three DMA channel options.

There is a dedicated Serial Infrared interface UART, which complies with IrDA v1.2 (Fast IR), HPSIR, and ASKIR formats (used by Sharp and other PDAs), as well as Consumer IR. This can also be used as a 2 pin UART.

The SIO1036 features Software Configurable Logic (SCL) for ease of use. SCL allows programmable system configuration of key functions such as the parallel port and UART.

The SIO1036 supports the ISA Plug-and-Play Standard register set (Version 1.0a) and provides the recommended functionality to support Windows operating systems, PC99, and PC2001. The I/O Address, DMA Channel, and Hardware IRQ of each device in the SIO1036 may be reprogrammed through the internal configuration registers. There are multiple I/O address location options, a Serialized IRQ interface, and three DMA channels.

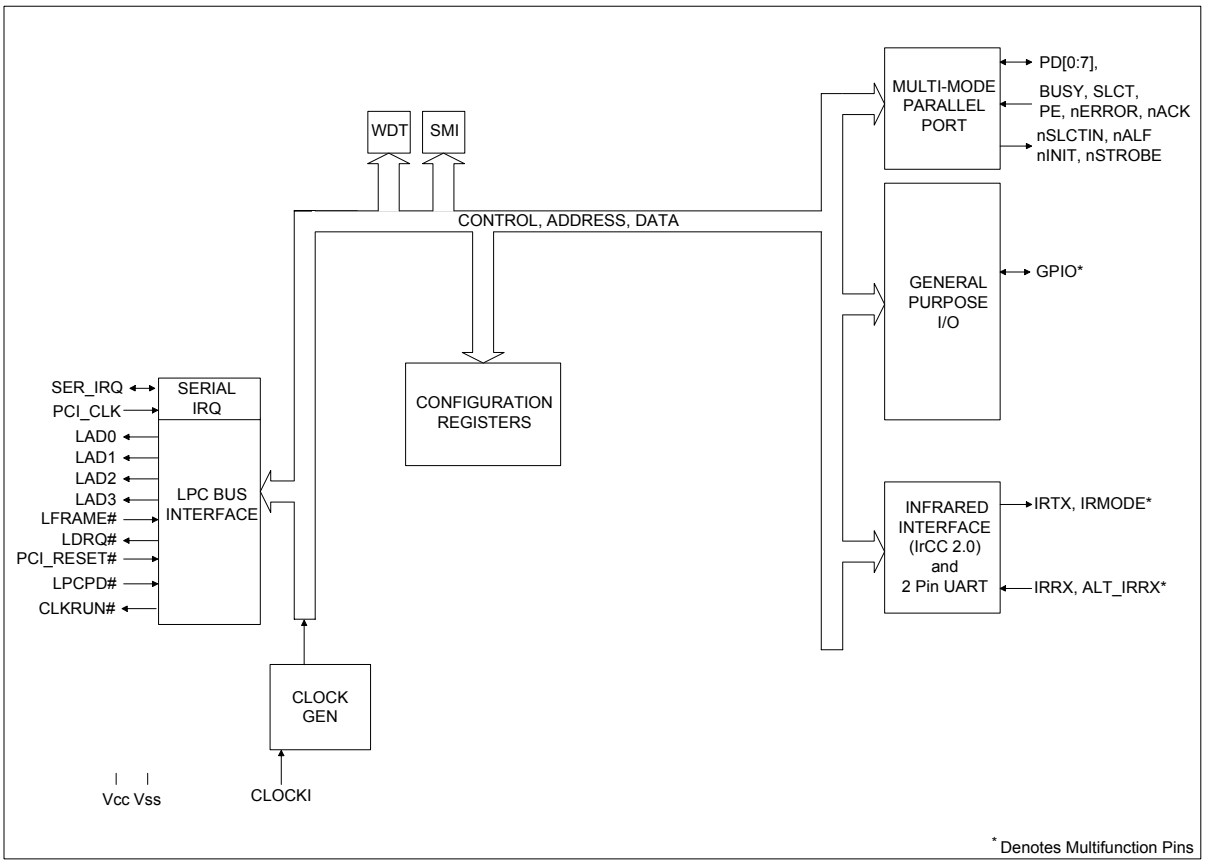
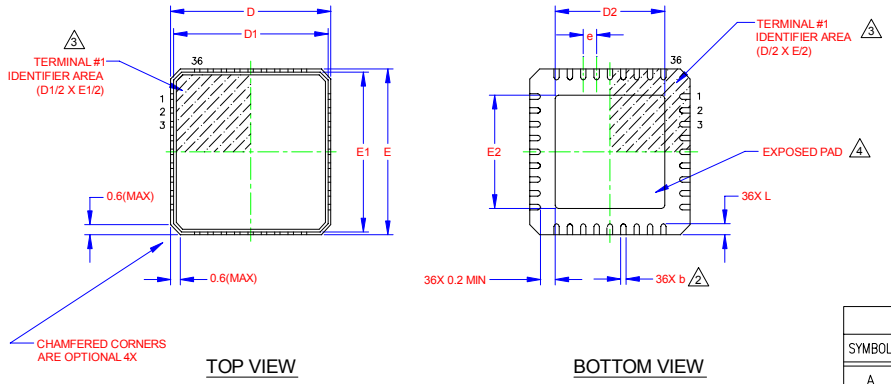


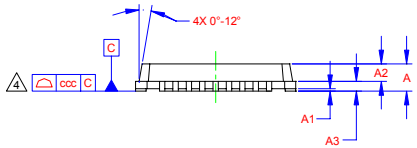

**Figure 1 SIO1036 Block Diagram**

# Package Outline

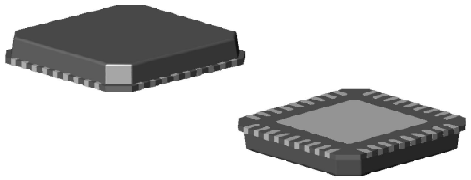



TOP VIEW

BOTTOM VIEW




SIDE VIEW



3-D VIEWS

| REVISION HISTORY | | | |
|---|---|---|---|
| REVISION | DESCRIPTION | DATE | RELEASED BY |
| - | SEE SPEC FRONT PAGE FOR REVISION HISTORY | - | - |
| | | | |

| COMMON DIMENSIONS | | | | | |
|---|---|---|---|---|---|
| SYMBOL | MIN | NOM | MAX | NOTE | REMARK |
| A | 0.80 | – | 1.00 | – | OVERALL PKG HEIGHT |
| A1 | 0 | 0.02 | 0.05 | – | STANDOFF |
| A2 | 0.60 | – | 0.80 | – | MOLD THICKNESS |
| A3 | | 0.20 REF | | – | LEAD FRAME THICKNESS |
| D/E | 5.85 | 6.00 | 6.15 | – | "X"/"Y" BODY SIZE |
| D1/E1 | 5.55 | – | 5.95 | – | "X"/"Y" MOLD SIZE |
| D2/E2 | | SEE VARIATIONS | | – | "X"/"Y" EXPOSED PAD SIZE |
| L | 0.35 | – | 0.75 | – | TERMINAL LENGTH |
| b | 0.18 | 0.25 | 0.30 | 2 | TERMINAL WIDTH |
| e | | 0.50 BSC | | – | TERMINAL PITCH |
| ccc | – | – | 0.08 | 4 | COPLANARITY |

| D2 / E2 VARIATIONS | | | | |
|---|---|---|---|---|
| MIN | NOM | MAX | NOTE | CATALOG PART |
| 3.55 | 3.70 | 3.85 | – | USB3280, USB2502 |
| | | | | EMC6W201 |
| | | | | SIO1036 |

**NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETER.
2. POSITION TOLERANCE OF EACH TERMINAL IS ± 0.05mm AT MAXIMUM MATERIAL CONDITION. DIMENSIONS "b" APPLIES TO PLATED TERMINALS AND IT IS MEASURED BETWEEN 0.15 AND 0.30 mm FROM THE TERMINAL TIP.
3. DETAILS OF TERMINAL #1 IDENTIFIER ARE OPTIONAL BUT MUST BE LOCATED WITHIN THE AREA INDICATED.
4. COPLANARITY ZONE APPLIES TO EXPOSED PAD AND TERMINALS.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS AND TOLERANCES ARE:
DECIMAL X.X ±0.1, X.XX ±0.05, X.XXX ±0.025
ANGULAR ±1°
DIM AND TOL PER ASME Y14.5M - 1994
MATERIAL -
FINISH -
PRINT WITH "SCALE TO FIT" DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

| | NAME | DATE |
|---|---|---|
| DRAWN | S.K.ILIEV | 12/6/04 |
| CHECKED | S.K.ILIEV | 12/6/04 |
| APPROVED | S.K.ILIEV | 12/6/04 |

80 ARKAY DRIVE
HAUPPAUGE, NY 11788
USA

SMSC™ SUCCESS BY DESIGN

TITLE: PACKAGE OUTLINE
36 TERMINAL QFN, 6x6mm BODY, 0.5mm PITCH

DWG NUMBER: MO-36-QFN-6x6 REV: F

SCALE: 1:1 STD COMPLIANCE: JEDEC: MO-220 SHEET: 1 OF 1