

## CN7004P 4 Ports KVM switch controller chip

### Features

- Single chip 4 ports KVM switch controller chip for Keyboard, Mouse, and VGA monitor
- Support PC/AT compatible PS/2 keyboard and mouse interface
- Single keyboard/mouse/monitor shared by 4 PCs
- PS/2 Keyboard Emulation functions for each port
- PS/2 Mouse Emulation for each port
- Auto-restore of keyboard/mouse configuration and status when switch to next port
- IBM/PC AT compatible PS/2 Keyboard support
- Microsoft Intellimouse, Wheel mouse support
- High quality video VGA resolution up to 1920x1440
- Hot-Key port selection function for port selection from user keyboard
- Push-button port selection
- Auto-scan mode support for scanning each PC port every 8 second automatically
- LED display for port status
- Hot-Plug support for adding/removing connected PCs
- Plug and play, No software required for each PCs
- Error free rebooting of PCs connected to each port
- 5V operations, low power CMOS chip

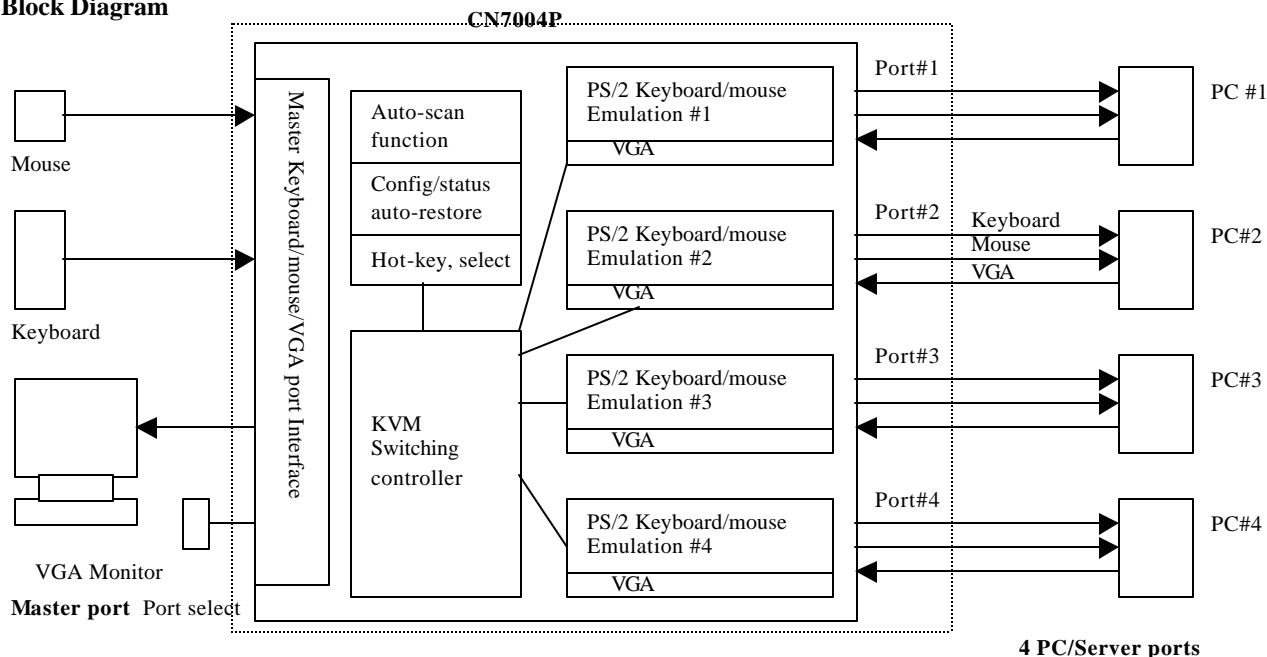
### Product Description

The CN7004P is a single chip 4 ports KVM switch controller chip with AT PS/2 Interface. It is designed for cost sensitive small office applications to share a single keyboard/mouse/monitor between 4 PC computers.

The highly integrated chip combines 4AT PS/2 compatible keyboard /mouse emulation and VGA monitor switching functions, Port selection, Auto-port-scanning, and hot-key functions, Automatic configuration/status restoration and hot-plug function in a single CMOS chip.

The CN7004P KVM switch controller supports 4 ports in wire-speed operation with AT PS/2 interface. For each port, the CN7004P provides keyboard emulation, mouse emulation, 200Mhz bandwidth VGA with 1920x1440 resolution. Single keyboard/mouse and monitor are connected to the master port and can be shared by PCs connected to each of the 4 ports. User can use push-button switch or Hot-key function from master keyboard to select one of the 4 ports to connect to the master keyboard/mouse/monitor. Auto-scan function can be activated to scan through each of the 4 ports every 8 second so user can monitor the activity of each one of the 4 port. Keyboard emulation and mouse emulation are used to provide virtual keyboard/mouse functions for the unselected ports. Microsoft Intellimouse, Wheel-mouse and standard mouse ..etc., are supported. With keyboard/mouse emulation the CN7004P provides error free rebooting of PCs connected to the each of the 4 ports. It also supports Hot-plug and No setup software required for each PCs. The CN7004P can be used in DOS, Win3.x, Win95/98/98E/2000/XP/WinNT, Netware, Unix and Linux. Environment.

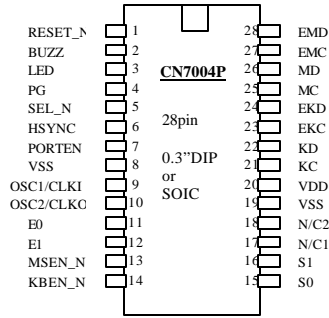
### <sup>1</sup>Block Diagram



# CN7004P

## Pin Out Diagram

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## Signal Descriptions:

Pin Name	Pin #	Type	Description
OSC1/CLKI	9	I	20 Mhz Oscillator Crystal In
OSC2/CLKO	10	O	20 Mhz Oscillator Crystal Out
RESET_N	1	I	Chip Reset, active low
BUZZ	2	O	BUZZER output
LED	3	O	LED output, to indicate which port is selected, Used with S0, S1 to indicate the selected port
PG	4	I	Power good signal input
SEL_N	5	I	Port select input, active low, each input pulse will connect the keyboard/mouse to the next port, the default port selected is port#0 when chip reset
HSYNC	6	I	VGA HSYNC input
PORTEN	7	O	Port Enable Signal output
KC	21	I/O	PS/2 Keyboard Clock
KD	22	I/O	PS/2 Keyboard Data
EKC	23	I/O	Keyboard Clock Emulation, for keyboard emulation
EKD	24	I/O	Keyboard Data Emulation, for keyboard emulation
MC	25	I/O	PS/2 Mouse Clock
MD	26	I/O	PS/2 Mouse Data
EMC	27	I/O	Mouse Clock Emulation, for mouse emulation
EMD	28	I/O	Mouse Data Emulation, for mouse emulation
E0, E1	11,12	O	Emulation Port Select, E0 and E1 selects one of 4 ports for keyboard/mouse emulation
MSEN_N	13	O	Mouse Enable, active low
KBEN_N	14	O	Keyboard Enable, active low
S0,S1	15,16	O	Port Select, S0,S1 selects one of the 4 ports to connect to the keyboard/mouse, pulsing the SEL_N input will cycle the S0,S1 to the next port
N/C1	17	reserved	Do Not Connect, reserved for testing
N/C2	18	reserved	Do Not Connect, reserved for testing
VSS	8,19	P	Ground
VDD	20	P	Positive Power Supply

## Functions

Functions	Descriptions
PC Ports	4
Console Port	1
PC Port Type	PS/2 Keyboard and PS/2 Mouse, VGA video
PC Selection	Button: by pulsing SEL_N input to select to next port HotKey: Scroll-Lock, Scroll-Lock to enable HotMode Within HotMode: press the following key within 2 seconds to select the port: 1: select port#0 2: select port#1 3: select port#2 4: select port#3 UP Arrow: select previous port S: enable auto scan mode, auto select to next port every 8 seconds. NOTE: All other keys or 2 seconds timeout will exit the HotMode.
Auto Scan mode	Enabled by HotKey, 8 seconds intervals
Keyboard Emulation	PS/2
Mouse Emulation	PS/2

**CN7004P**

**Electrical Specification and Timings:**

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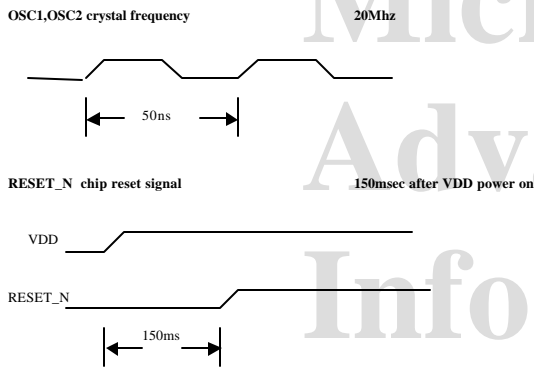
**Absolute Maximum Ratings**

Operating Temperature	0 degree C to 70 degree C
Storage Temperature	-50 degree C to 150 degree C
All output with respect to Vss	-0.3V to (VDD+0.3V)
Supply Voltage with respect to Vss	-0.3V to +6.5V
Power Dissipation	TBD
<b>Warning:</b> Stress beyond those listed under absolute Maximum Ratings may cause permanent damage to the device. These are stress rating only. Functionality at or above these limits is not recommended and extended exposure to Absolute Maximum May affect device reliability.	

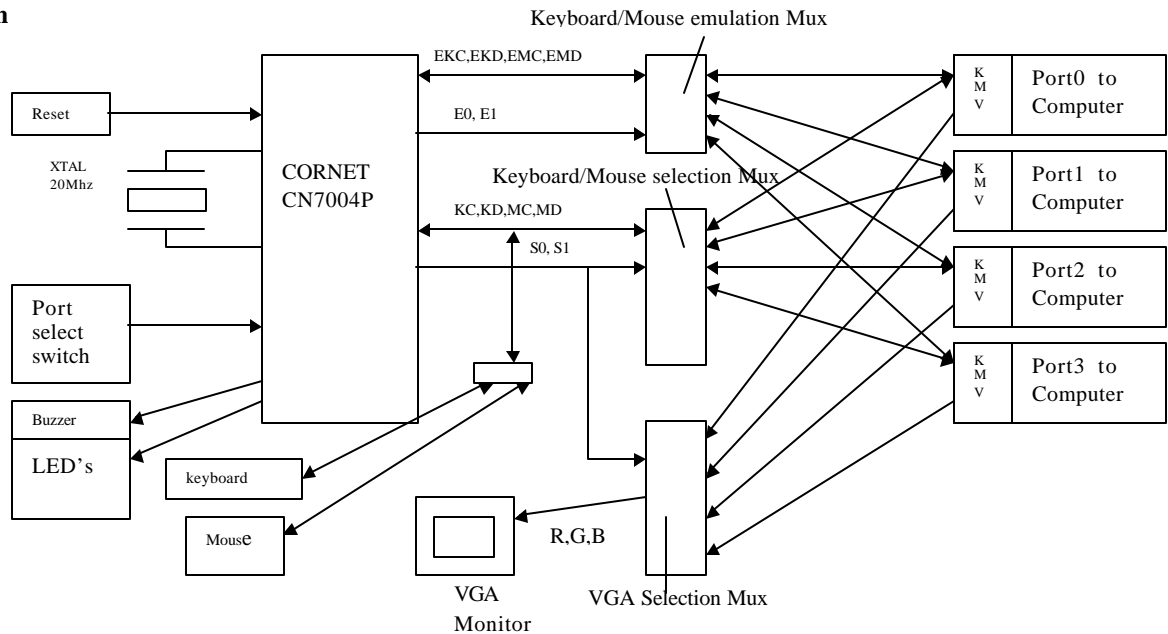
**DC Characteristics**

Vdd Supply Voltage	3V to 5.5V
Idd Supply Current	30ma at 5V Vdd
Input Low Voltage	0.6V
Input High Voltage	+2V
Output Low Voltage	0.6V
Output High Voltage	(Vdd-0.7V)
Output pin Sink Current	10ma, maximum
Output pin Source Current	10ma, maximum

**AC Timing Characteristics**



**Application Diagram**



**4 ports KVM switch application Diagram**