

# BlueCat Linux Target Support Guide

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for Motorola CPV5350 cPCI Boards

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# *Overview*

The BlueCat Linux Target Support Guide (TSG) for the Motorola CPV5350 cPCI board describes the BlueCat Linux boot procedure and the configuration of the prebuilt BlueCat Linux kernel contained in the `cpci_cpv5350` TSP distribution. It summarizes the demo systems supported by the `cpci_cpv5350` TSP. Chapters 4 and 5 list the supported demo systems and device drivers. Chapter 6 provides an overview of the Automated Test System (ATS) and qualification of the CPV5350 cPCI board.



This chapter describes the BlueCat Linux boot procedure for the CPV5350 cPCI board.

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## Booting BlueCat Linux on a CPV5350 Board from a Floppy

The following procedure is used to boot BlueCat Linux on a CPV5350 board from a floppy. Note that for a BlueCat Linux embedded system to boot successfully from a floppy disk, the floppy device driver must be configured in the kernel.

- Install a BlueCat Linux embedded system on a floppy. A detailed description of the installation procedure is available in the *BlueCat Linux User's Guide*. Refer to the section entitled "Booting BlueCat Linux on x86 from a Floppy Disk" in the *Booting BlueCat Linux* chapter. [Unsure of cross-reference](#)
- Insert the floppy disk into the floppy drive of the CPV5350 board.
- Make sure that the floppy is specified as a first boot device in the BIOS. The next reset will boot BlueCat Linux onto a CPV5350 board from the floppy.

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## Booting BlueCat Linux on a CPV5350 Board from an IDE Disk

The following procedure is used to boot BlueCat Linux on a CPV5350 board from an IDE disk. Note that for a BlueCat Linux embedded system to boot successfully from an IDE disk, a hardware device driver for the IDE disk must be configured in the kernel.

- Install a BlueCat Linux embedded system on an IDE disk. A detailed description of the installation procedure is available in the *BlueCat Linux User's Guide*. Refer to the section entitled “Booting BlueCat Linux on x86 from an IDE Disk” in the “Booting BlueCat Linux” chapter.
- **No such cross reference exists**
- Make sure that the IDE disk is specified as the first boot device in the BIOS. On the CPV5350 board, an IDE disk can be connected to the Secondary IDE controller, either as a Master device or as a Slave device. Select the appropriate boot device, depending on the interface your IDE disk is connected to. The next reset will boot BlueCat Linux onto the target from the IDE disk.

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## Booting BlueCat Linux on a CPV5350 Board from a CompactFlash Device

The following procedure boots BlueCat Linux on a CPV5350 board from a CompactFlash device. Note that for a BlueCat Linux embedded system to boot successfully from a CompactFlash device, a hardware device driver for an IDE disk must be configured in the kernel.

- Install a BlueCat Linux embedded system on a CompactFlash device. A detailed description of the installation procedure is available in the *BlueCat Linux User's Guide*. Refer to the section entitled "Booting BlueCat Linux on x86 from a CompactFlash Device" in the "Booting BlueCat Linux" chapter.
- **No such cross reference exists. Unsure of content veracity.**
- Make sure that the CompactFlash disk is specified as the first boot device in the BIOS. On the CPV5350 board, a CompactFlash device is always connected to the Primary IDE controller as a Master device. Optionally, you can install a second CompactFlash device to the CompactFlash socket that is connected to the Primary IDE controller as a Slave device. Select the appropriate boot device, depending on the interface your CompactFlash device is connected to. The next reset will boot BlueCat Linux onto the target from the CompactFlash device.

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## Booting BlueCat Linux on a CPV5350 Board from the Network

The following procedure boots BlueCat Linux on a CPV5350 board from the network:

- Install the OS Loader on a floppy, a hard disk, or a CompactFlash device. The OS Loader is itself a BlueCat Linux embedded system, so all the installation instructions described in the previous three sections apply.
- Boot the OS Loader on the target.
- Boot a BlueCat Linux embedded system on the CPV5350 board from a network using the OS Loader. A detailed description of the booting procedure is available in the *BlueCat Linux User's Guide*. Refer to the section entitled “Booting BlueCat Linux from a Network or a Parallel Port” in the “Booting BlueCat Linux” chapter.

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## Booting BlueCat Linux on a CPV5350 Board from a Parallel Port

The following procedure boots BlueCat Linux on a CPV5350 board from a parallel port:

- Install the OS Loader on a floppy, a hard disk, or a CompactFlash device. The OS Loader is itself a BlueCat Linux embedded system, so all the installation instructions in the previous sections apply.
- Boot the OS Loader on the target.
- Boot a BlueCat Linux embedded system on the CPV5350 board from a parallel port using the OS Loader. A detailed description of the booting procedure is available in the *BlueCat Linux User's Guide*. Refer to the section entitled “Booting BlueCat Linux from a Network or a Parallel Port” in the “Booting BlueCat Linux” chapter.

# *Default Kernel Configuration*

This chapter shows the configuration of the prebuilt BlueCat Linux kernel contained in the `pci_cpv5350` TSP distribution. The following tables help you in finding information on specific topics.

**Table 3-1: BlueCat Linux Default Configuration for the `pci_cpv5350` TSP Distribution**

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**Table 3-1: BlueCat Linux Default Configuration for the cpci\_cpv5350 TSP Distribution (Continued)**

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**Table 3-2: Code Maturity Level Options**

Option	Value	Description
CONFIG_EXPERIMENTAL	N	Prompt for development and/or incomplete code/drivers

**Table 3-3: Processor Type and Features**

Option	Value	Description
CONFIG_M386	Y	386 processor family
CONFIG_1GB	Y	Maximum physical memory 1 GB
CONFIG_MATH_EMULATION	N	Math emulation
CONFIG_MTRR	N	MTRR (Memory Type Range Register) support
CONFIG_SMP	N	Symmetric multi-processing support

**Table 3-4: Loadable Module Support**

Option	Value	Description
CONFIG_MODULES	Y	Enable loadable module support
CONFIG_MODVERSIONS	Y	Set version information on all symbols for modules
CONFIG_KMOD	Y	Kernel module loader

**Table 3-5: General Setup**

Option	Value	Description
CONFIG_NET	Y	Networking support
CONFIG_BLUECAT_LOADER	N	BlueCat OS Loader support
CONFIG_BLUECAT_IGNORE_PRINTK	N	BlueCat ignore printk
CONFIG_BLUECAT_SMALL_FOOTPRINT	N	BlueCat small memory footprint
CONFIG_BLUECAT_MEMSIZE	N	Memory usage statistics
CONFIG_PCI	Y	PCI support
CONFIG_PCI_GOBIOS	Any	PCI access mode
CONFIG_PCI_QUIRKS	N	PCI quirks
CONFIG_PCI_OLD_PROC	N	Backward-compatible /proc/pci
CONFIG_MCA	N	MCA support
CONFIG_VISWS	N	SGI Visual Workstation support
CONFIG_SYSVIPC	Y	System V IPC
CONFIG_BSD_PROCESS_ACCT	Y	BSD process accounting
CONFIG_SYSCTL	Y	Systl support
CONFIG_BIN_FMT_AOUT	M	Kernel support for a.out binaries
CONFIG_BIN_FMT_ELF	Y	Kernel support for ELF binaries
CONFIG_BIN_FMT_MISC	M	Kernel support for MISC binaries
CONFIG_PARPORT	N	Parallel port support
CONFIG_APM	N	Advanced Power Management BIOS support

**Table 3-6: Memory Technology Devices (MTD)**

Option	Value	Description
CONFIG_MTD	N	Memory Technology Device (MTD) support

**Table 3-7: Modular Advanced Power Management (MAPM)**

Option	Value	Description
CONFIG_MAPM	N	Modular Advanced Power Management support

**Table 3-8: Plug and Play Support**

Option	Value	Description
CONFIG_PNP	N	Plug and Play support

**Table 3-9: Block Devices**

Option	Value	Description
CONFIG_BLK_DEV_FD	Y	Normal PC floppy disk support
CONFIG_BLK_DEV_IDE	M	Enhanced IDE/MFM/RLL disk/cdrom/tape/floppy support
CONFIG_BLK_DEV_HD_IDE	N	Use old disk-only driver on primary interface
CONFIG_BLK_DEV_IDEDISK	M	Include IDE/ATA-2 DISK support
CONFIG_BLK_DEV_IDECD	N	Include IDE/ATARI CDROM support
CONFIG_BLK_DEV_IDETAPE	N	Include IDE/ATARI TAPE support
CONFIG_BLK_DEV_IDEFLOPPY	N	Include IDE/ATARI FLOPPY support
CONFIG_BLK_DEV_IDESCSI	N	SCSI emulation support
CONFIG_BLK_DEV_CMD640	N	CMD640 chipset bugfix/support
CONFIG_BLK_DEV_RZ1000	N	RZ1000chipset bugfix/support
CONFIG_BLK_DEV_IDEPCI	Y	Generic PCI IDE chipset support
CONFIG_BLK_DEV_IDEDMA	N	Generic PCI bus-master DMA support
CONFIG_BLK_DEV_OFFBOARD	N	Boot off-board chipset first support
CONFIG_IDE_CHIPSETS	N	Other IDE chipset support
CONFIG_BLK_DEV_LOOP	M	Loopback device support
CONFIG_BLK_DEV_NBD	M	Network block device support
CONFIG_BLK_DEV_MD	N	Multiple devices driver support
CONFIG_BLK_DEV_RAM	Y	RAM disk support
CONFIG_BLK_DEV_INITRD	N	Initial RAM disk (initrd) support
CONFIG_BLUECAT_RFS	Y	BlueCat RFS support
CONFIG_BLK_DEV_GENERIC_FLAS_DOC	N	M-System DiskOnChip
CONFIG_BLK_DEV_XD	N	XT hard disk support
CONFIG_BLK_DEV_DAC960	N	Mylex DAC960/DAC1 100 PCI RAID Controller support
CONFIG_BLK_CPQ_DA	N	Compaq SMART2 support
CONFIG_PARIDE_PARPORT	N	Parallel port IDE device support

**Table 3-10: Networking Options**

Option	Value	Description
CONFIG_PACKET	M	Packet socket
CONFIG_NETLINK	N	Kernel/User netlink socket
CONFIG_FIREWALL	N	Network firewalls
CONFIG_FILTER	N	Socket filtering

**Table 3-10: Networking Options (Continued)**

Option	Value	Description
CONFIG_UNIX	Y	Unix domain sockets
CONFIG_INET	Y	TCP/IP networking
CONFIG_IP_MULTICAST	N	IP: multicasting
CONFIG_IP_ADVANCED_ROUTER	N	IP: advanced router
CONFIG_IP_PNP	N	IP: kernel level autoconfiguration
CONFIG_IP_ROUTER	N	IP: optimize as router not host
CONFIG_NET_IPIP	M	IP: tunneling
CONFIG_NET_IPGRE	M	IP: GRE tunnels over IP
CONFIG_IP_ALIAS	N	IP: aliasing support
CONFIG_SYN_COOKIES	N	IP: TCP syncookie support (not enabled per default)
CONFIG_INET_RARP	M	IP: reverse ARP
CONFIG_SKB_LARGE	N	IP: allow large windows (not recommended if <16 Mb of memory)
CONFIG_IPX	M	The IPX protocol
CONFIG_IPX_INTERN	N	IPX: full internal IPX network
CONFIG_ATALK	N	Appletalk DDP

**Table 3-11: SCSI Support**

Option	Value	Description
CONFIG_SCSI	N	SCSI support

**Table 3-12: SCSI Low-level Drivers**

Option	Value	Description
CONFIG_SCSI_G_NCR5380_PORT	Not Set	SCSI low-level drivers NCR5380/53c400 mapping method (use Port for T130B)

**Table 3-13: Network Device Support**

Option	Value	Description
CONFIG_NETDEVICES	Y	Network device support
CONFIG_DUMMY	M	Dummy net driver support
CONFIG_EQUALIZER	M	EQL (serial line load balancing) support
CONFIG_NET_SB1000	N	General Instruments Surfboard 1000
CONFIG_FDDI	N	FDDI driver support

**Table 3-13: Network Device Support (Continued)**

Option	Value	Description
CONFIG_PPP	M	PPP (point-to-point) support
CONFIG_SLIP	N	SLIP (serial line) support
CONFIG_NET_RADIO	N	Wireless LAN (non-harrradio)
CONFIG_NET_FC	N	Fibre Channel driver support
CONFIG_SBN1	N	SBN12-xx support

**Table 3-14: ARCnet Drivers**

Option	Value	Description
CONFIG_ARCNET	N	ARCnet support

**Table 3-15: Ethernet (10 or 100 Mbit)**

Option	Value	Description
CONFIG_NET_ETHERNET	Y	Ethernet (10 or 100 Mbit)
CONFIG_NET_VENDOR_3COM	N	3COM cards
CONFIG_LANCE	N	AMD LANCE and PCnet (AT1500 and NE2100) support
CONFIG_NET_VENDOR_SMC	N	Western Digital/SMC cards
CONFIG_NET_VENDOR_RACAL	N	Racal-Interlan (Micom) NI cards
CONFIG_NET_ISA	N	Other ISA cards
CONFIG_NET_EISA	Y	EISA, VLB, PCI and on board controllers
CONFIG_PCNET32	N	AMD PCnet32 (VLB and PCI) support
CONFIG_APRICOT	N	Apricot Xen-II on board Ethernet
CONFIG_CS89x0	N	CS89x0 support
CONFIG_DM9102	N	DM9102 PCI Fast Ethernet Adapter support (exp)
CONFIG_DE4X5	N	Generic DECchip & DIGITAL EtherWORKS PCI/EISA
CONFIG_DEC_ELCP	N	DECchip Tulip (dc21x4x) PCI support
CONFIG_DGRS	N	Digi Intl. RightSwitch SE-Xsupport
CONFIG_EEEXPRESS_PRO100	M	Ether ExpressPro/100 support
CONFIG_NE2K_PCI	N	PCI NE2000 support
CONFIG_TLAN	N	TI ThunderLAN support
CONFIG_VIA_RHINE	N	VIA Rhine support
CONFIG_NET_POCKET	N	Pocket and portable adaptors

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**Table 3-16: Token Ring Devices**

Option	Value	Description
CONFIG_TR	N	Token Ring driver support

**Table 3-17: Wan Interfaces**

Option	Value	Description
CONFIG_HOSTESS_SV11	N	Control Hostess SV-11 support
CONFIG_COSA	N	COSA/SRP sync serial boards support
CONFIG_SEALEVEL_4021	N	Sealevel Systems 4021 support
CONFIG_DLCI	N	Frame relay DLCI support
CONFIG_WAN_DRIVERS	N	WAN drivers

**Table 3-18: Amateur Radio Support**

Option	Value	Description
CONFIG_HAMRADIO	N	Amateur radio support

**Table 3-19: IrDA Subsystem**

Option	Value	Description
CONFIG_IRDA	N	IrDA subsystem support

**Table 3-20: ISDN Subsystem**

Option	Value	Description
CONFIG_ISDN	N	ISDN support

**Table 3-21: Old CD-ROM Drivers (not SCSI/IDE)**

Option	Value	Description
CONFIG_CD_NO_IDESCSI	N	Support non-SCSI/IDE/ATARI CDROM drivers

**Table 3-22: Character Devices**

Option	Value	Description
CONFIG_VT	Y	Virtual terminal
CONFIG_VT_CONSOLE	Y	Support for console on virtual terminal
CONFIG_SERIAL	Y	Standard/generic (dumb) serial support
CONFIG_SERIAL_CONSOLE	Y	Support for console on serial port
CONFIG_SERIAL_EXTENDED	N	Extended dumb serial driver options

**Table 3-22: Character Devices (Continued)**

Option	Value	Description
CONFIG_SERIAL_NONSTANDARD	N	Non-standard serial port support
CONFIG_UNIX98_PTYS	Y	Unix98 PTY support
CONFIG_UNIX98_PTY_COUNT	256	Maximum number of Unix98 PTYs in use (0-2048)
CONFIG_MOUSE	Y	Mouse support (not serial mice)
CONFIG_QIC02_TAPE	N	QIC-02 tape support
CONFIG_WATCHDOG	N	Watchdog Timer Support
CONFIG_NVRAM	M	/dev/nvram support
CONFIG_RTC	N	Enhanced Real Time Clock Support
CONFIG_DTLK	N	Double Talk PC internal speech card support

**Table 3-23: Mice**

Option	Value	Description
CONFIG_ATIXL_BUSMOUSE	N	ATIXL busmouse support
CONFIG_BUSMOUSE	N	Logitech busmouse support
CONFIG_MS_BUSMOUSE	N	Microsoft busmouse support
CONFIG_PSMOUSE	N	PS/2 mouse (aka "auxiliary device") support
CONFIG_82C710_MOUSE	N	C&T 82C710 mouse port support (as on TI Travwlmate)
CONFIG_PC110_PAD	N	PC110 digitizer pad support

**Table 3-24: Video for Linux**

Option	Value	Description
CONFIG_VIDEO_DEV	N	Video For Linux

**Table 3-25: Joystick Support**

Option	Value	Description
CONFIG_JOYSTICK	N	Joystick support

**Table 3-26: Floppy Tape Device Driver, Ftape**

Option	Value	Description
CONFIG_FTAPE	N	Ftape (QIC-80/Travan) support

**Table 3-26: Floppy Tape Device Driver, Ftape (Continued)**

Option	Value	Description
CONFIG_FT_NORMAL_DEBUG	Not Set	Debugging output
CONFIG_FT_STD_FDC	Not Set	Floppy tape controller

**Table 3-27: Filesystems**

Option	Value	Description
CONFIG_QUOTA	N	Quota support
CONFIG_AUTOFS_FS	N	Kernel automounter support
CONFIG_AFFS_FS	N	Amiga FFS filesystem support
CONFIG_HFS_FS	N	Apple Macintosh filesystem support (exp)
CONFIG_FAT_FS	N	DOS FAT filesystem support
CONFIG_MSDOS_FS	N	MSDOS filesystem support
CONFIG_VFAT_FS	N	VFAT (Windows-95) filesystem support
CONFIG_ISO9660_FS	N	ISO 9660 CD-ROM filesystem support
CONFIG_JOLIET	N	Microsoft Joliet CD-ROM extensions
CONFIG_MINIX_FS	N	Minix filesystem support
CONFIG_NTFS_FS	N	NTFS filesystem support (read only)
CONFIG_HPFS_FS	N	OS/2 HPFS filesystem support (read only)
CONFIG_PROC_FS	Y	/proc filesystem support
CONFIG_DEVPTS_FS	Y	/dev/pts filesystem for Unix98 PTYs
CONFIG_ROMFS_FS	M	ROM filesystem support
CONFIG_EXT2_FS	Y	Second extended filesystem support
CONFIG_SYSV_FS	N	System V and Coherent filesystem support
CONFIG_UFS_FS	N	UFS filesystem support
CONFIG_UFS_FS_WRITE	N	UFS filesystem write support (exp)

**Table 3-28: Network Filesystems**

Option	Value	Description
CONFIG_CODA_FS	M	Coda filesystem support (advanced network filesystem)
CONFIG_NFS_FS	M	NFS filesystem support
CONFIG_SMB_FS	M	SMB filesystem support (to mount WfW shares, etc.)
CONFIG_NCP_FS	N	NCP filesystem support (to mount NetWare volumes)

**Table 3-29: Partition Types**

Option	Value	Description
CONFIG_BSD_DISKLABEL	N	BSD disklabel (BSD partition tables) support
CONFIG_MAC_PARTITION	N	Macintosh partition map support
CONFIG_SMD_DISKLABEL	N	SMD disklabel (Sun partition tables) support
CONFIG_SOLARIS_x86_PARTITION	N	Solaris (x86) partition table support

**Table 3-30: Native Language Support**

Option	Value	Description
CONFIG_NLS_CODEPAGE_437	M	Codepage 437 (United States, Canada)
CONFIG_NLS_CODEPAGE_737	M	Codepage 737 (Greek)
CONFIG_NLS_CODEPAGE_775	M	Codepage 775 (Baltic Rim)
CONFIG_NLS_CODEPAGE_850	M	Codepage 850 (Europe)
CONFIG_NLS_CODEPAGE_852	M	Codepage 852 (Central/Eastern Europe)
CONFIG_NLS_CODEPAGE_855	M	Codepage 855 (Cyrillic)
CONFIG_NLS_CODEPAGE_857	M	Codepage 857 (Turkish)
CONFIG_NLS_CODEPAGE_860	M	Codepage 860 (Portugese)
CONFIG_NLS_CODEPAGE_861	M	Codepage 861 (Icelandic)
CONFIG_NLS_CODEPAGE_862	M	Codepage 862 (Hebrew)
CONFIG_NLS_CODEPAGE_863	M	Codepage 863 (Canadian French)
CONFIG_NLS_CODEPAGE_864	M	Codepage 864 (Arabic)
CONFIG_NLS_CODEPAGE_865	M	Codepage 865 (Norwegian, Danish)
CONFIG_NLS_CODEPAGE_866	M	Codepage 866 (Cyrillic/Russian)
CONFIG_NLS_CODEPAGE_869	M	Codepage 869 (Greek)
CONFIG_NLS_CODEPAGE_874	M	Codepage 874 (Thai)
CONFIG_NLS_ISO8859_1	M	NLS ISO 8859-1 (Latin: Western European Languages)
CONFIG_NLS_ISO8859_2	M	NLS ISO 8859-2 (Latin-2: Slavic/Central European Languages)
CONFIG_NLS_ISO8859_3	M	NLS ISO 8859-3 (Latin-3: Esperanto, Galician, Maltese, Turkish)
CONFIG_NLS_ISO8859_4	M	NLS ISO 8859-4 (Latin-4: Estonian, Latvian, Lithuanian)
CONFIG_NLS_ISO8859_5	M	NLS ISO 8859-5 (Cyrillic)
CONFIG_NLS_ISO8859_6	M	NLS ISO 8859-6 (Arabic)
CONFIG_NLS_ISO8859_7	M	NLS ISO 8859-7 (Modern Greek)

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**Table 3-30: Native Language Support (Continued)**

Option	Value	Description
CONFIG_NLS_ISO8859_8	M	NLS ISO 8859-8 (Hebrew)
CONFIG_NLS_ISO8859_9	M	NLS ISO 8859-9 (Latin 5: Turkish)
CONFIG_NLS_ISO8859_14	M	NLS ISO 8859-14 (Latin 8: Celtic)
CONFIG_NLS_ISO8859_15	M	NLS ISO 8859-15 (Latin 9: Western European Languages with Euro)
CONFIG_NLS_KOI8_R	M	NLS KOI8-R (Russian)

**Table 3-31: Console Drivers**

Option	Value	Description
CONFIG_VGA_CONSOLE	Y	VGA text console
CONFIG_VIDEO_SELECT	N	Video mode selection support

**Table 3-32: Sound**

Option	Value	Description
CONFIG_SOUND	N	Sound card support

**Table 3-33: Kernel Hacking**

Option	Value	Description
CONFIG_MAGIC_SYSRQ	N	Magic SysRq key
CONFIG_BLUECAT_KDBG	N	Include skdb kernel debugger

**Table 3-34: Lynx Messenger Support**

Option	Value	Description
CONFIG_BLUECAT_IOPMAN	N	Enable Lynx IOP Manager support

Address Dave's question about the use of "M" as a Value.



## *Supported Demo Systems*

The following table lists the demo systems supported by the pci\_cp5350 TSP. Boot devices supported by the prebuilt demo systems included in the distribution are shown.

Table 4-1: Demo Systems Supported by the pci\_cp5350 TSP

Demo	Boot Devices Supported by Default	ROM Requirements	RAM Requirements
caffeine	Flash Network using the OS Loader	2397 KB	16000 KB
default	Floppy Flash Network using the OS Loader	1212 KB	7000 KB
disk	Floppy Flash IDE CompactFlash Network using the OS Loader	1273 KB	8500KB
diskboot	Floppy Flash IDE CompactFlash DiskOnChip Network using the OS Loader	1124 KB	7000 KB
ffs	Floppy Flash Network using the OS Loader	1042 KB	9500 KB
ftp	Flash Network using the OS Loader	1494 KB	10500 KB
gdb	Floppy Flash Network using the OS Loader	1067 KB	9000 KB

Table 4-1: Demo Systems Supported by the cpci\_cp5350 TSP (Continued)

Demo	Boot Devices Supported by Default	ROM Requirements	RAM Requirements
gnutar	Floppy Flash IDE CompactFlash Network using the OS Loader	1113 KB	7000 KB
hello	Floppy Flash Network using the OS Loader	361 KB	4500 KB
install	Floppy Flash IDE CompactFlash Network using the OS Loader	1316 KB	8500 KB
kdbg	Floppy Flash Network using the OS Loader	1056 KB	7500 KB
loadkeys	Floppy Flash Network using the OS Loader	1314 KB	7500 KB
mapm	Floppy Flash Network using the OS Loader	978 KB	7000 KB
memsize	Floppy Flash Network using the OS Loader	1056 KB	6000 KB
modular	Floppy Flash Network using the OS Loader	1052 KB	6500 KB
msng_exmpl	Floppy Flash Network using the OS Loader	1027 KB	8000 KB
msng_minet	Flash Network using the OS Loader	1967 KB	15000 KB
multi_user	Flash Network using the OS Loader	1758 KB	9500 KB
multi_user_net	Flash Network using the OS Loader	2157 KB	13000KB

**Table 4-1: Demo Systems Supported by the pci\_cpv5350 TSP (Continued)**

Demo	Boot Devices Supported by Default	ROM Requirements	RAM Requirements
nfsroot	Floppy Flash Network using the OS Loader	384 KB	6000 KB
osloader	Floppy Flash IDE CompactFlash	564 KB	2500 KB
ping	Floppy Flash Network using the OS Loader	1081 KB	9000 KB
rcp	Floppy Flash Network using the OS Loader	1223 KB	9500 KB
rlogin	Floppy Flash Network using the OS Loader	1350 KB	10000 KB
rootfs	Floppy Flash IDE CompactFlash Network using the OS Loader	284 KB	4000 KB
shell	Floppy Flash Network using the OS Loader	1096 KB	7000 KB
tcl	Floppy Flash Network using the OS Loader	1205 KB	7000 KB
tcpdump	Floppy Flash Network using the OS Loader	1173 KB	9000 KB
tutorial	Floppy Flash Network using the OS Loader	1120 KB	7000 KB
xclock	Flash Network using the OS Loader	2528 KB	12500 KB
xdemo1	Flash Network using the OS Loader	3004 KB	14500 KB
xdemo2	Flash Network using the OS Loader	3565 KB	17500 KB



## Supported Device Drivers

The following table shows the device drivers supported by the `pci_cpv5350` TSP.

Table 5-1: Device Drivers Supported by the `pci_cpv5350` TSP

Hardware Device	Device Drivers	Location in Source Tree	Kernel Configuration Options	Notes
<b>Ethernet Controller</b> Dual Intel 82559	EtherExpressPro/100 driver	<code>driver/net/eeepro100.c</code>	<code>CONFIG_EEXPRESS_PRO100</code>	
<b>EIDE Controller</b> Intel 82440BX chipset	Generic IDE	<code>drivers/block/ide.c</code>	<code>CONFIG_BLK_DEV_IDE</code>	
<b>IDE Hard Disk</b>	Generic IDE disk driver	<code>drivers/block/ide_disk.c</code>	<code>CONFIG_BLK_DEV_IDEDISK</code>	
<b>CompactFLASH</b> Surface-mounted SanDisk 16 Mb Flash (Primary Master) One CompactFLASH on-board socket (Primary Slave)	Generic IDE disk driver	<code>drivers/block/ide_disk.c</code>	<code>CONFIG_BLK_DEV_IDEDISK</code>	
<b>FDD Controller</b> One Floppy Port	Standard PC floppy driver	<code>drivers/block/floppy.c</code>	<code>CONFIG_BLK_DEV_FD</code>	
<b>Keyboard/Mouse</b> PS/2	PC keyboard driver	<code>drivers/char/pc_keyb.c</code>	<code>CONFIG_PCMOUSE</code>	Support for keyboard is always present

Table 5-1: Device Drivers Supported by the cpci\_cpv5350 TSP (Continued)

Hardware Device	Device Drivers	Location in Source Tree	Kernel Configuration Options	Notes
<b>Serial Ports</b> Two 16550-compatible async serial ports with RS-232 interface	Standard serial driver	drivers/char/ serial.c	CONFIG_SERIAL	
<b>Video</b> Intel740 with 2D and 3D accelerated video, 8 Mb SGRAM	Standard PC video console driver	drivers/ video/ vgacon.c	CONFIG_VGA_ CONSOLE	Graphic modes supported by X Windows
<b>USB</b> One USB 4-pin port	USB drivers	drivers/usb/ *.c	CONFIG_USB	Driver not tested
<b>Parallel Port</b> One parallel printer port	Parallel port driver	drivers/misc/ *.c	CONFIG_PARPORT	Driver not tested

This chapter provides the results of the Automated Test System (ATS) testing and qualification of BlueCat Linux for THE Motorola CPV5350 cPCI Board. For a detailed description of the BlueCat Linux Test Suite and ATS refer to the *BlueCat User's Guide*.

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## ATS Suites Test Results

All supported ATS Suites run on the Motorola CPV5350 cPCI board. Test results are as shown in Chapter 5 of the *BlueCat User's Guide*.

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## Real-Time Performance

This section summarizes the results of the BlueCat Linux real-time performance test suite which simulates a real-world system environment and measures the Interrupt Response and Task Response times.

The real-time performance statistics for the Motorola CPV5350 cPCI board will be available in a subsequent release.

- CPU – Mobile Pentium II, at 266 MHz
- L1 Cache – 16 KB Instruction, 16 KB Data
- L2 Cache – 512 KB
- RAM – 256 MB
- Disk – IDE
- Ethernet – Intel i82559ER

**Table 6-1: Real-Time Performance - Configuration 1**

<b>Configuration</b> schedule policy: fifo schedule priority: 99 background load: network (ping -f)	
<b>Interrupt Response:</b> Best Measured: Average: Worst Measured:	12 us 17 us 140 us
<b>Task Response:</b> Best Measured: Average: Worst Measured:	98 us 158 us 1544 us

**Table 6-2: Real-Time Performance - Configuration 2**

<b>Configuration</b> schedule policy: fifo schedule priority: 99 background load: disk (mkfs)	
<b>Interrupt Response:</b> Best Measured: Average: Worst Measured:	12 us 113 us 908 us
<b>Task Response:</b> Best Measured: Average: Worst Measured:	96 us 52324 us 5874919 us

**Table 6-3: Real-Time Performance - Configuration 3**

<b>Configuration</b> schedule policy: fifo schedule priority: 99 background load: none	
<b>Interrupt Response:</b> Best Measured: Average: Worst Measured:	 12 us 13 us 51 us
<b>Task Response:</b> Best Measured: Average: Worst Measured:	 93 us 97 us 1051 us

