

# **Sales Rep's Guide for PowerPC™**

**OEM Business  
Development**

**Version 1.0  
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**IBM Microelectronics Division**

**IBM INTERNAL USE ONLY**

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# PowerPC Goal and Objectives

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- Goal: Establish PowerPC as a major MPU architecture
- 6XX Objective: Achieve 20% PC market share by 1996
- Our target is to sell 2M units to customers other than Apple in '96

# 6XX Application and Customer Priorities

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- Success in the PC industry is crucial to establishing PowerPC as a standard architecture
  - Tier 1 accounts: Compaq, Dell, AST, Acer, NEC, Toshiba, ZDS, Packard Bell, Gateway
  - Tier 2-3 accounts: ICL, Olivetti, Bovis, AT&T(NCR), Hyundia, Samsung, Trigem, Goldstar, DEC, Unisys, Micron
  - PC infrastructure vendors
    - Motherboard vendors
    - PC design houses
- Second priority should be high end server and workstation vendors: DG, Unisys, Auspex, Bull, Encore, Integraph, Sun, DEC, Nixdorf.
  - Current SPARC, MIPS, 68K, 88K
  - Unix, Windows NT server vendors
- Third priority - other non-military applications
  - PDA, high end consumer electronics
  - tele/data communications

# PowerPC Selling Points Overview

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- Performance advantage
  - 2X Price/Performance over X86
  - Price/Performance advantages maintained because of smaller die sizes, advanced silicon technology, lower power consumption
  - Scalable RISC architecture enables future performance increases - scalability proven by continued delivery of faster processors like the 601 100MHz and 604, all on schedule
  - Unique floating point instructions enable soft-dsp, the ability to utilize FP for such applications as video decompression, speech recognition, high speed communications, etc., without the expense of additional hardware
- Extensive industry support/acceptance
  - IBM, Apple, Motorola, Canon, Hitachi, Group Bull, Microsoft, Sunsoft, New Taiwan PC Consortium are just a few of the industry names investing in the architecture
  - Over 1 million processors have already been shipped, many times more than any other desktop RISC microprocessor.
- Varied OS support offers market opportunities for OEM system vendors
  - OS/2 for PowerPC
  - Windows NT
  - System 7
  - AIX
  - Solaris
  - Several real-time OSs
- Compatibility
  - All OSs offer compatibility technology which preserves users' investment in legacy (Win16 & DOS) applications
  - Open systems architecture (PowerPC Reference Platform) assures OS compatibility among different OEM system vendors
- Extensive tools environment in place to support hardware and software vendors developing products
- Multiple sources for the processor (IBM and Motorola) offer choice for the customer and guarantees supply

# 6XX Processor Positioning: Servers

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		<b>2H94</b>	<b>1H95</b>	<b>2H95</b>
<b>High End Server / Multiproc.</b>	<b>Processor ISPEC/ FSPEC</b>	N/A	604-100 160/165	620-133 220/300
	<b>Chipset</b>	No MP Chipset Avail.	Montana / Nevada	Alberta
	<b>Operating System</b>	N/A	NT AS AIX	NT AS AIX
<b>Entry level Server / Unproc.</b>	<b>Processor ISPEC/ FSPEC</b>	601-80 85-105	601-100 105-125	604-100 160-165
	<b>Chipset</b>	N, S Dakota	Kauai / Lanai	Kauai / Lanai
	<b>Operating System</b>	NT AS	NT AS AIX	NT AS AIX OS2 for PPC

NOTE: These dates represent when the customer can expect to deliver production systems to the end user. Development should start earlier using appropriate tools, product samples, beta OSs, etc.

# 6XX Processor Positioning: PC Desktop

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		2H94	1H95	2H95
<b>High Perf: \$2,500+</b>	<b>Processor ISPEC/ FSPEC</b>	601-80 85/105	604-100 160/165	604-133 * Unannounced - plan not committed
	<b>Chipset</b>	N, S Dakota	Kauai / Lanai	Kauai / Lanai
	<b>Operating System</b>	Win NT	Win NT OS2 for PPC AIX	Win NT OS2 for PPC AIX, Solaris
<b>Mid Range: \$1,500 - \$2,500</b>	<b>Processor ISPEC/ FSPEC</b>	601-66 60/80	601-100 105/125	604-100 160/165
	<b>Chipset</b>	N, S Dakota	Kauai / Lanai	Kauai / Lanai
	<b>Operating System</b>	Win NT	Win NT OS2 for PPC	Win NT OS2 for PPC
<b>Entry Level: \$1,500 and Below</b>	<b>Processor ISPEC/ FSPEC</b>	N/A, Lack of OS that	601-80 85/105	601-100 105/125
	<b>Chipset</b>	addresses this market segment	Kauai / Lanai	Kauai / Lanai
	<b>Operating System</b>	↓	OS2 for PPC	OS2 for PPC

# Intel Processor Positioning: PC Desktop

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		2H94	1H95	2H95
<b>High Perf:</b> <b>\$2,500+</b>	<b>Processor</b>	P54C 90/100	P54C 133	P54C 150
	<b>ISPEC/ FSPEC</b>	100/81 Pentium 66 67/64	133/108 P54C 100 100/81	150/122 P54C 133 133/108
<b>Mid Range:</b> <b>\$1,500 - \$2,500</b>	<b>Processor</b>	Pentium 60	P54C 90	P54C 100
	<b>ISPEC/ FSPEC</b>	58/52 486DX4 100 46/22	90/73 Pentium 66 67/64	100/81 P54C 90 90/73
<b>Entry Level:</b> <b>\$1,500 and Below</b>	<b>Processor</b>	486SX2 50	486DX2 66	486DX4 100
	<b>ISPEC/ FSPEC</b>	24/NA	32/16	46/22



# 6XX Processor Positioning: Notebooks

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		2H94	1H95	2H95
<b>High End</b>	<b>Processor ISPEC/ FSPEC</b>	N/A, Lack of OS that	603-80 <i>75/85</i>	603-100 <i>* Unannounced product</i>
	<b>Chipset</b>	addresses this market segment	Idaho	Idaho
	<b>Operating System</b>		Win NT OS2 for PPC	Win NT OS2 for PPC
<b>Entry level</b>	<b>Processor ISPEC/ FSPEC</b>		603-66 <i>60/70</i>	603-80 <i>75/85</i>
	<b>Chipset</b>		Idaho	Idaho
	<b>Operating System</b>	↓	OS2 for PPC	OS2 for PPC

# Intel Processor Positioning: PC Portables

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**2H94      1H95      2H95**

<b>High End</b>	<b>Processor ISPEC/ FSPEC</b>	486DX4 75 37/18	P51LP 75 83/70	P51LP 90 90/73
<b>Entry Level</b>	<b>Processor ISPEC/ FSPEC</b>	486SX2 50 24.4/NA	486DX4 75 37/18 486SX2 66 32.2/NA	P51LP 75 83/70 486-DX4 75 37/18

# Operating System Status

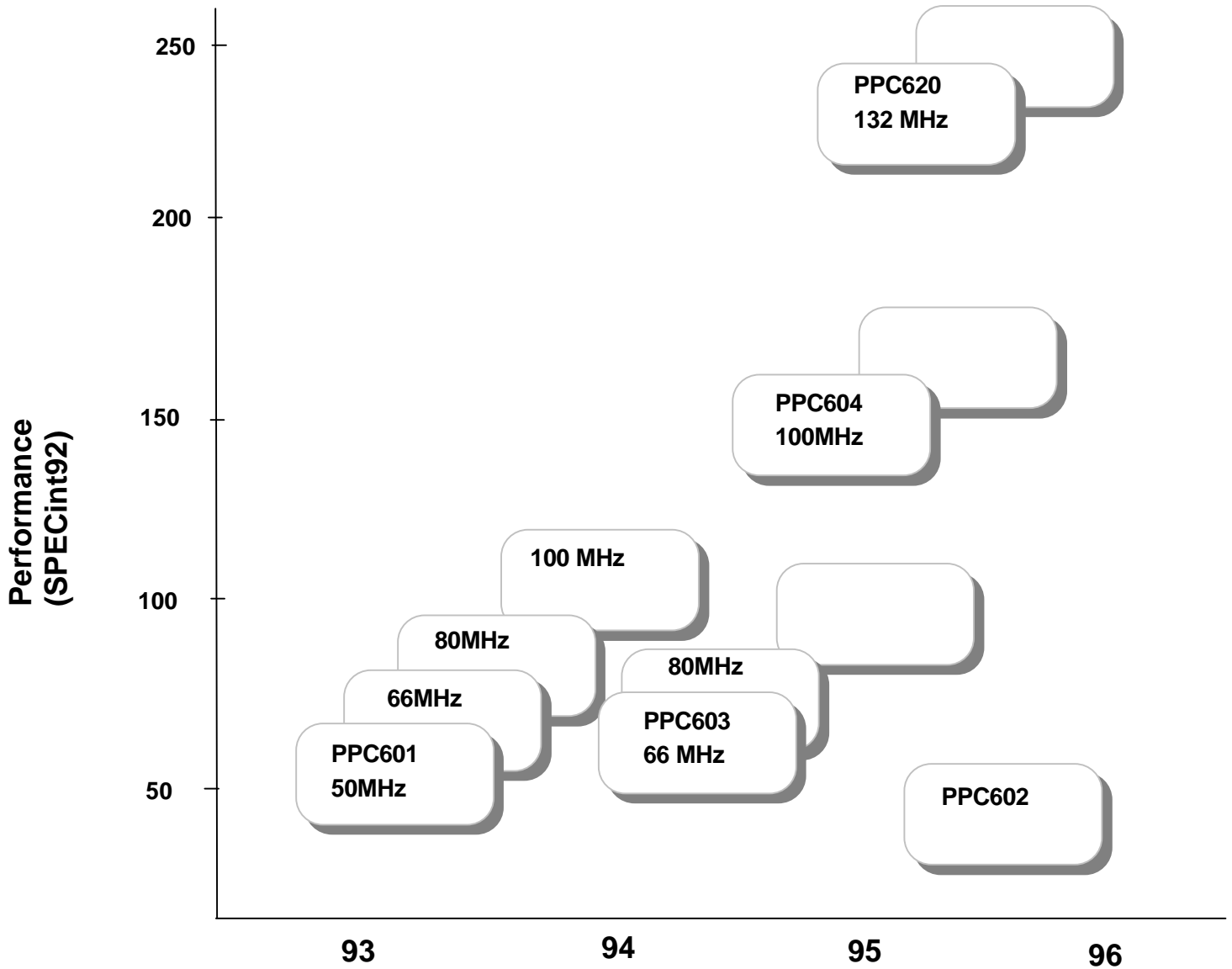
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<b>Operating System</b>	<b>Beta</b>	<b>Production</b>
Microsoft Windows NT and NT AS	June, 1994	September, 1994
IBM OS/2 for PowerPC	September, 1994	December, 1994
IBM AIX	August, 1994	December, 1994
Solaris	4Q, 1994	1Q, 1995

NOTE: For up-to-the-minute estimates of OS availability, please contact the appropriate OS Rep. listed under "contacts" in this document.

# PowerPC 6XX Processor Roadmap

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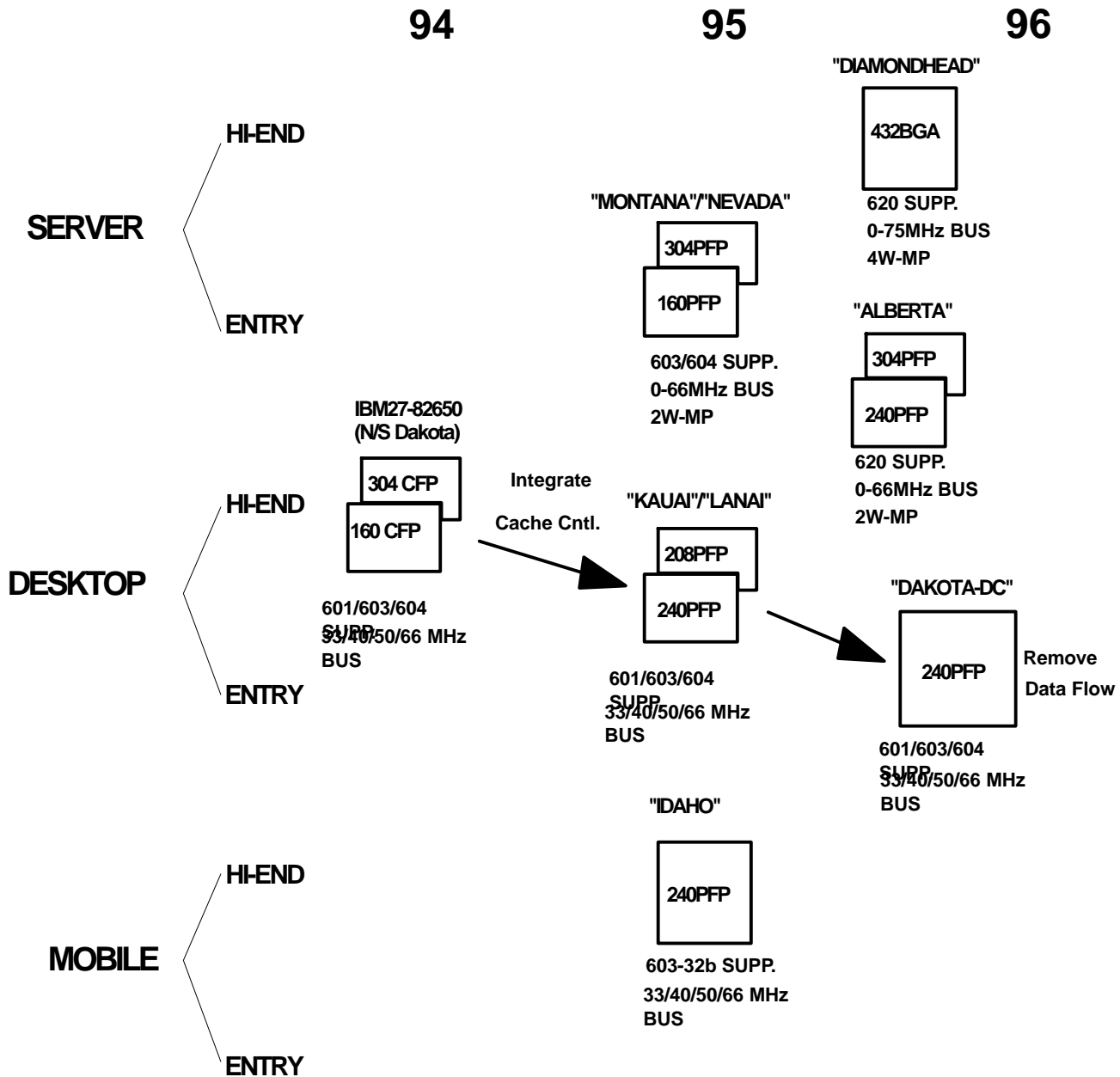


# PowerPC Specifications and Timelines

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	403	601	601-100	603	604	620
MHz	33	50,66,80	100	66,80	100	133
SPECint92 (est)		85(80MHz)	105(100MHz)	75(80MHz)	160(100MHz)	225(133MHz)
SPECfp92 (est)		105(80MHz)	125(100MHz)	85(80MHz)	165(100MHz)	300(133MHz)
Dhrystone2.1	72K					
Package	PQFP	CQFP	CQFP	CQFP,BGA	CQFP,BGA.	BGA
Pin Ct (QFP)	160	304	304	240	304	625(BGA)
Power(W)	<1W(33MHz)	5.5(50MHz)	4.0(100MHz)	2.5(66MHz)	9.0(100MHz)	26(133MHz)
Volts	3.3	3.6	2.5int, 3.3/5 ext	3.3	3.3	3.3
Samp, Vol Dates	3Q94,1Q95	NOW,NOW	NOW,4Q94	NOW,3Q94	NOW,4Q94	3Q94,2Q95

# PowerPC to PCI Chipset Roadmap



NOTE: For up-to-the-minute availability information, please call the appropriate chipset rep listed in the "contacts" portion of this document.

# PowerPC PCI Chipset Features

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	IBM- 82650	IBM-IDAHO	IBM-MONT/NEV	Motorola-Eagle	IBM KAUAI/LANAI
<b>PACKAGE</b>	160,304 QFP	240 QFP	160,304 QFP	304 BGA& TTL	208,240
<b>TECHNOLOGY</b>	3.3V CMOS	5V CMOS	3.3V CMOS	3.3V CMOS	3.3V CMOS
<b>SAMPLES</b>	Now	3Q94	4Q94	3Q94	4Q94
<b>CPU SUPPORT</b>	601/603/604	603 32-bit	603/604 2w MP	603/604	601/603/604
<b>CPU FREQ (MHz)</b>	0-66	0-40	0-66	66	0-66
<b>L2 Cache Support</b>	OFFCHIP	OFFCHIP	OFFCHIP	ONBOARD WB/WT	ONBOARD WB/WT
<b>PCI Bus Freq(MHz)</b>	0-33	0-33	0-33	0-33	0-33
<b>PCI Master Bursts</b>	Y	Y	Y	Y	Y
<b>DRAM (MB)</b>	256MB	256MB	1G	1G	256MB
<b>INTERLEAVE</b>	N	N	N	?	N
<b>PARITY</b>	Y	Y	Y	Y	Y
<b>ECC</b>	N	N	Y	N	Y
<b>POWER MGMT</b>	N	Y	Y	Y	N

Note: Motorola Eagle information not confirmed.

# PowerPC 601 Motherboard Offering

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- Motherboard product being offered to "kick-start" PowerPC systems to market.
- Available starting in August on special bid basis.

Processor	PowerPC 601
CPU/LocBus/PCI speed	66/66/33 MHz
Max Memory	256MB
Max L2 Cache	512 K
Video Support	LB Video via PCI slot
Slots	2 PCI 3 ISA
Audio	16bit Business Audio
Disk I/O	SCSI 2
Other I/O	Ser/Par via SuperIO
Form Factor	LPX



# PowerPC Adopters

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## Company

## Application

### SYSTEMS:

Canon	PC
Group Bull	Workstation, Server
Hitachi	Workstation, Server, Mainframe
Apple	PC, Server, Notebook, Printers
Auspex	MP Systems
Hyundia	PC, Servers
Harris	Servers
IBM	PC, Workstations, Servers, Data Comm.
UMAX	PC
Peacock	PC
Mitac	PC
Tatung	PC
Daystar Digital	Accelerator Cards
Ford	Automotive
Thomson	VME Computers
Motorola	Processors mfg, VME Computers
Scientific Atlanta	Settop terminals
Tadpole	Notebook Computers
Mercury Computer	Industrial Real-time MP Systems
Modular Computer	PC, Servers
Parsytec	MP Voice/Pattern Recog. Systems
Fifth Gen. Computer	MP Voice/Pattern Recog. Systems

### IHV's, DESIGN CENTERS, FIRMWARE, CHIPSETS

FIC	Motherboards
Mitac	Motherboards
Tatung	Motherboards
DTK	Motherboards
UMC	PCI-ISA (Compatible with N/S Dakota)
Shannon	Modular Motherboards, Design Center
PowerHouse	Design Center
Power Computing	Design Center
Firmworks	Boot Code
Sontex	Boot Code

# Collateral Material Avail. at

# **1-800-POWERPC**

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MPROSOSFU-03	REAL TIME OPERATING SYSTEM FOR POWERPC
MPRPOASFU-01	POWER OPEN ASSOCIATION FACT SHEET
MPRPOESFU-01	POWER OPEN ENVIRONMENT FACT SHEET
MPRPOEWPU-01	POWER OPEN ENVIRONMENT WHITE PAPER
MPRPVSSFU-01	POWERPC VISUAL SIMULATOR FOR RISC SYSTEM/6000
MPRPVSTBU-01	POWERPC VISUAL SIMULATOR - TECHNICAL BRIEF
MPRSOLARI-01	SOLARIS OPERATING SYSTEM SPARC X86 PPC
MPRRSWSFU-03	RISCVATCH 601 FOR PPC 601 MICROPROCESSOR
MPRTLSSFU-02	POWERPC TOOLS SHORT FORM SPEC SHEET
MPRTOOKBK/AD	POWERPC TOOLS
MPRPPCARC-01	The POWERPC ARCHITECTURE REPRINT
MPRPPCCPU-01	POWERPC BINARY COMPATIBILITY
MPRPPCCSD-01	POWERPC-PCI/MEMORY BRIDGE (CHIPSET BROCHURE)
MPRPPCFBR-01	POWERPC FAMILY BROCHURE
MPRPPCMRI-01	BYTE MAGAZINE REPRINT (4/94)
MPRPPCMRU-02	BYTE MAGAZINE REPRINT (8/93)
MPRPPCNLU-02	POWERPC NEWSLETTER
MPRPPCRPU-01	POWERPC REFERENCE PLATFORM SPECIFICATION GUIDE
MPRPPCSFU-01	POWERPC FAMILY FACT SHEET
MPRPPCWPU-01	POWERPC ARCHITECTURE WHITE PAPER

# Collateral Material Avail. at

## 1-800-POWERPC (con't)

MPR4XXSFU-01	POWERPC 4XX EMBEDDED CONTROLLERS
MPR403SFU-01	POWERPC 403GA EMBEDDED CONTROLLER
MPR601HSU-02	POWERPC 601 RISC MICROPROCESSOR HARDWARE SPEC
MPR601MRU-01	MULTIPROCESSING ASPECTS OF THE POWERPC 601
MPR601MRU-02	THE POWERPC 601 MICROPROCESSOR
MPR601100-01	POWERPC 601 100 MHz RISC MICROPROCESSOR
MPR601SDK-02	POWERPC 601 SYSTEM DESIGN KIT
MPR601SFU-04	POWERPC 601 RISC MICROPROCESSOR
MPR601TSU-02	POWERPC 601 TECHNICAL SUMMARY
MPR601UMU-02	POWERPC 601 USERS MANUAL
MPR603SDK-01	POWERPC 603 SYSTEM DESIGN KIT
MPR603SFU-01	POWERPC 603 SHORT FORM SPEC SHEET
MPR603TSU-02	POWERPC 603 RISC MICROPROCESSOR TECHNICAL SUMMARY
MPR603WPI-01	POWERPC 603 MICROPROCESSOR PAPER
MPR603WP2-01	POWERPC 603 MICROPROCESSOR WHITE PAPER
MPR603UMU-01	POWERPC 603 USERS MANUAL
MPR604SFU-01	POWERPC 604 SPEC SHEET
MPR604TSU-02	POWERPC 604 RISC MICROPROCESSOR TECHNICAL SUMMARY
MPR604WPI-01	POWERPC 604 MICROPROCESSOR PAPER
MPRPPCMRR-01	MICROPROCESSOR REPORT REPRINT

# Sales Resources & Contacts

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- Product Marketing Staff - Kevin Kenlan, Mgr 802-769-7665
  - 6XX Product Managers
    - Processor Specific customer calls
    - Processor specific issues - pricing, special programs
    - Team Leader - Bill Sloma - 802-769-7798
    - 601 - Mike Teixeira - 802-769-6644
    - 602 - Peter Barratt - 802-769-6417
    - 603 - Lori Peterson - 802-769-7613
    - 604 - Sandy Albu - 512-838-4032
    - 620 - Michelle Dawson - 802-769-6199
  - Other Product Marketing staff
    - ISV, OS Strategy - Brian Peterson - 802-769-6790
    - Firmware, chipsets, motherboards - Duncan Needler - 802-769-5684
    - Jill Mullan - special projects - 802-769-6751
    - Gina Rodgers - trade shows, marketing materials - 802-769-6059
    - Joanne Soncrant - trade shows, marketing materials - 802-769-6811
    - Mary Lomas - literature, 800-POWERPC support - 802-769-6097
- PowerPC Business Development - Curt Welcher, Mgr 914-892-5303
  - Supports 4XX and 6XX families
  - Provides account team support
    - Structure solution
    - PowerPC Penetration planning
    - Briefings, seminars, customer calls, presentations
    - Cross IMD product line and IBM division opportunity advocate
    - feedback marketing reqs. to product marketing
    - Eastern US - Jim Dillon - 802-769-6565
    - Western US - Ken Homza - 512-838-6877
- PCI Chipset Marketing
  - Jeff Lee - Mgr 802-769-6899

# Sales Resources & Contacts (continued)

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- Tactical Marketing Staff
  - US PowerPC Specialist - Dan Ratliff - 802-769-3994
  - Europe PowerPC Specialist - Roberto Re - 039-600.1
  - Asia PowerPC Specialist - Hiroshi Tatsumi - 775-87-6132
- European PowerPC Program Manager - Bernard Lambert - 331-490-58533
- PowerPC Application Engineering (level 2 support)
  - SW & HW Tools - Tom Wilson, Mgr - 802-769-7019
  - Processor Specific & Motherboards - John Grupp, Mgr - 512-795-7221
- Software OS Contacts - Pricing, OEM Contracts, Terms and Conditions
  - OS/2 for PowerPC: Miles Barel, Brand Mgr - 407-443-7154
  - AIX: Dave Hall, OEM Mgr - 512-838-2008
  - WindowsNT:
    - Western US & Aisa - Sam Warner - 206-803-0600 x1165
    - Eastern US & Europe - Jim Penrod - 512-838-1760
- Publications ordering:
  - 1-800-POWERPC

# 1994 Field Marching Orders

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- Target PC OEMs
  - Sell server & high end desktop apps in '94 - that's where the OS and SW is available
  - Sell 601 for delivery in '94, 603, 604 for systems targeted for '95.
  - Entertain only high volume non-PC opportunities (20K per year or more of 6XX)

# '94 Field Marching Orders (con't)

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- Tier 1 PC Vendors
  - Establish IMD business relationship
    - Sell PCMCIA, SIMMs, Chipsets, ASICs, X86, SRAM
  - Secure an account advocate to assist with penetration plans and Product Positioning
    - PowerPC Market Development Engineer - from PowerPC Business Development
    - PowerPC Product Manager - from 6XX Product Marketing Staff
  - Develop PowerPC account penetration plan and profile
    - Product development and marketing plans & strategies
    - Customer's perception and expectations of PowerPC
    - Intel relationship
    - ID high/middle desktop and server TAM/SAM
    - ID component and subsystem suppliers
    - ID key decision makers and influencers
    - Develop plan to establish IMD executive relationship
    - Establish technical relationship with FAE PowerPC specialist
  - Sign PowerPC NDA if product plans, roadmaps, and documentation on unannounced chips are needed.
  - Sell 601 System Design Kit as an evaluated board and as a vehicle to accelerate 601 systems development.
  - Sell 601 LPX motherboard to those who want to purchase motherboards rather than develop their own system or wait for PowerPC offerings from OEM motherboard vendors.
  - Structure custom PowerPC briefing if necessary

# '94 Field Marching Orders (con't)

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- Tier 2-3 PC Vendors
  - Focus on OEMs with strong sales and marketing
    - direct sales channels
    - strong dealer channel
  - Focus on OEMs with Performance PC and/or low end server products
  - Follow process for Tier 1
- PC Infrastructure Vendors
  - Focus on motherboard vendors and PC Design Houses with Top Tier clients
  - For startups, target companies with Top Tier financial backing
  - Establish IMD business relationship
  - sell: Chipsets, ASICs, X86, etc
  - PowerPC overview call
  - Sell 601 System Design Kit as an evaluation board and/or vehicle to accelerate systems development
- Server and Workstation Vendors
  - target industry icon accounts
    - SAM of 10K + units/yr
  - have FAE assess OEM development tools requirements
- Others
  - Target industry icon accounts
  - SAM of 25K + per year