

CHAPTER ONE: INTRODUCTION.....	1
STUDY GOALS AND OBJECTIVES.....	1
REASONS FOR UNDERTAKING THE STUDY	1
EMBEDDED TECHNOLOGY MARKET SEGMENTATION	2
REPORT SCOPE AND ORGANIZATION.....	2
INTENDED AUDIENCE.....	3
METHODOLOGY	3
ANALYST CREDENTIALS.....	4
RELATED REPORTS.....	5
BCC ON-LINE SERVICES.....	5
DISCLAIMER	5
DISCLAIMER (CONTINUED).....	5
CHAPTER TWO: SUMMARY.....	6
<i>SUMMARY TABLE WORLDWIDE EMBEDDED TECHNOLOGY</i>	
<i>MARKET, THROUGH 2015 (\$ MILLIONS)</i>	6
<i>SUMMARY FIGURE EMBEDDED TECHNOLOGY MARKET, 2009-2015</i>	
<i>(\$ MILLIONS)</i>	7
CHAPTER THREE: OVERVIEW	8
HISTORY AND DEFINITION	8
EMBEDDED SYSTEMS: VERTICAL MARKETS	9
CONSUMER.....	10
COMMUNICATIONS	10
ENTERPRISE	10
OTHER	11
Industrial	11
Automotive.....	11
Medical.....	11
Government	12
Avionics.....	12
EMBEDDED SYSTEMS: GEOGRAPHIC SEGMENTS	12
EMBEDDED SYSTEMS DEVELOPMENT CYCLE.....	12
<i>FIGURE 1 TYPICAL EMBEDDED DEVICES DEVELOPMENT CYCLE</i>	13
DETERMINING EMBEDDED PRODUCT COST	14
NONRECURRING EXPENSE (NRE).....	14
<i>TABLE 1 NRE IN EMBEDDED SYSTEM DEVELOPMENT</i>	15
PER UNIT COST	15
<i>TABLE 2 BILL OF MATERIALS CALCULATION FOR EMBEDDED</i>	
<i>DEVICE</i>	16
CHAPTER FOUR: EMBEDDED HARDWARE	17
HARDWARE COMPONENTS IN A TYPICAL EMBEDDED SYSTEM.....	17

<i>FIGURE 2 HARDWARE COMPONENTS IN A TYPICAL EMBEDDED DEVICE</i>	17
TYPICAL EMBEDDED HARDWARE DEVELOPMENT CYCLE	18
Processor Selection	18
Memory	19
Peripheral Requirements	20
FPGA and ASIC.....	20
Board Design and Integration.....	20
TRENDS IN EMBEDDED HARDWARE TECHNOLOGY.....	21
CHAPTER FIVE: OVERALL EMBEDDED HARDWARE MARKET.....	22
OVERALL EMBEDDED HARDWARE MARKET	22
OVERALL EMBEDDED HARDWARE ...(CONTINUED)	23
<i>TABLE 3 WORLDWIDE EMBEDDED HARDWARE MARKET SEGMENTS, THROUGH 2015 (\$ MILLIONS)</i>	24
<i>FIGURE 3 WORLDWIDE MARKET FOR EMBEDDED HARDWARE SEGMENTS, 2009–2015 (\$ MILLIONS)</i>	24
<i>FIGURE 4 WORLDWIDE MARKET FOR EMBEDDED HARDWARE SEGMENTS, 2010 (%)</i>	25
MARKET BY REGION	25
<i>TABLE 4 WORLDWIDE EMBEDDED HARDWARE MARKET BY GEOGRAPHIC SEGMENTS, THROUGH 2015 (\$ MILLIONS)</i>	26
<i>FIGURE 5 EMBEDDED HARDWARE MARKET BY GEOGRAPHIC SEGMENTS, 2009–2015 (\$ MILLIONS)</i>	26
<i>FIGURE 6 WORLDWIDE MARKET BY REGION, 2010 (\$ MILLIONS)</i>	27
MARKET BY VERTICAL SEGMENTS.....	27
<i>TABLE 5 WORLDWIDE EMBEDDED HARDWARE MARKET BY VERTICAL SEGMENTS, THROUGH 2015 (\$ MILLIONS)</i>	28
<i>FIGURE 7 EMBEDDED HARDWARE MARKET BY VERTICAL SEGMENTS, 2009–2015 (\$ MILLIONS)</i>	28
<i>FIGURE 8 WORLDWIDE MARKET BY VERTICAL SEGMENTS, 2010 (\$ MILLIONS)</i>	29
CHAPTER SIX: PROCESSOR IP	30
TYPES OF PROCESSORS ARCHITECTURES.....	30
PROCESSOR IP MARKET: BUSINESS MODELS	31
OVERALL PROCESSOR IP MARKET.....	32
<i>TABLE 6 WORLDWIDE PROCESSOR IP MARKET FORECAST (\$ MILLIONS)</i>	32
EMBEDDED PROCESSOR SHIPMENT YEAR OVER YEAR	32
<i>TABLE 7 WORLDWIDE PROCESSOR IP SHIPMENT AND REVENUE, THROUGH 2015</i>	33
PROCESSOR IP MARKET BY REGION	33
<i>TABLE 8 WORLDWIDE PROCESSOR MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)</i>	33

<i>TABLE 9 WORLDWIDE PROCESSOR MARKET SHARE BY REGION</i>	
2010 (%).....	34
<i>FIGURE 9 WORLDWIDE PROCESSOR IP MARKET BY REGION, 2010</i>	
(%).....	34
PROCESSOR IP MARKET BY VERTICAL	34
<i>TABLE 10 WORLDWIDE PROCESSOR MARKET BY VERTICALS (\$</i>	
<i>MILLIONS)</i>	35
PROCESSOR IP: MAJOR PLAYERS	35
COMPANY PROFILES.....	36
ARM, Ltd.....	36
Related Products.....	37
Recent Developments.....	38
CEVA, Inc.	38
Related Products.....	38
Recent Developments.....	39
MIPS Technologies, Inc.	39
Related Products.....	40
Recent Developments.....	41
Synopsys, Inc (ARC)	41
Related Products.....	42
Recent Developments.....	42
PowerPC.....	43
Recent Developments.....	43
MARKET SHARE OF PROCESSOR IP VENDORS	44
<i>TABLE 11 PROCESSOR IP VENDORS MARKET SHARE, 2010 (%).....</i>	44
<i>FIGURE 10 WORLDWIDE PROCESSOR IP MARKET SHARE, 2010 (%).....</i>	45
TRENDS IN PROCESSOR IP MARKET.....	45
TRENDS IN PROCESSOR IP MARKET (CONTINUED)	46
CHAPTER SEVEN: MICROPROCESSORS AND MICROCONTROLLERS	47
INDUSTRY OVERVIEW	47
MICROCONTROLLER CLASSIFICATION BY BIT WIDTH	48
Thirty-two-bit versus Sixty-four-bit Processors	49
MICROPROCESSOR MARKET TRENDS	50
MCU/MPU WORLDWIDE MARKET	51
<i>TABLE 12 WORLDWIDE MPU/MCU MARKET FORECAST (\$</i>	
<i>MILLIONS)</i>	51
<i>TABLE 13 WORLDWIDE MPU/MCU MARKET BY REGION (\$</i>	
<i>MILLIONS)</i>	51
<i>TABLE 14 WORLDWIDE MPU/MCU MARKET BY VERTICALS (\$</i>	
<i>MILLIONS)</i>	52
SELECTED VENDOR PROFILES	52
FREESCALE	52
Related Products.....	52
Qorivva/5xxx Power Architecture MCUs.....	53

Kinetis ARM MCUs	53
ColdFire+ MCUs	53
i.MX Applications Processors Based on ARM	
Technology	53
QorIQ Processing Platforms	53
PowerQUICC	54
Recent Developments	54
INTEL	55
Related Products	55
Recent Developments	56
MARVELL	56
Related Products	57
ARMADA XP	57
ARMADA 300	57
Discovery Innovation Series	57
Kirkwood Series	57
Recent Developments	58
MICROCHIP TECHNOLOGY, INC.	58
Related Products	59
Recent Developments	59
NVIDIA	60
Related Products	60
Recent Developments	60
NXP	61
Related Products	61
Recent Developments	61
QUALCOMM	62
Related Products	62
Recent Developments	63
RENESAS	63
Related Products	63
Recent Developments	64
SAMSUNG	65
Related Products	65
Recent Developments	66
VIA	66
Related Products	66
VIA QuadCore Processor	67
VIA Nano X2 E-Series Processor	67
VIA Nano X2 Processor	67
VIA Eden X2 Processor	67
VIA Nano Processor L-Series	67
VIA Nano Processor U-Series	67
VIA PV530 Processor	68

VIA C7-M Mobile Processor.....	68
VIA C7 Processor	68
VIA Eden Embedded Processor.....	68
Recent Developments	69
ZILOG	69
Related Products.....	70
Recent Developments	70
MPU/MCU PRICING AND BUSINESS STRATEGY	70
MPU/MCU VENDOR MARKET SHARE (2010)	71
<i>TABLE 15 MCU/MPU VENDORS MARKET SHARE, 2010 (%)</i>	72
<i>FIGURE 11 MPU/MCU VENDOR MARKET SHARE, 2010 (%)</i>	72
CHAPTER EIGHT: DIGITAL SIGNAL PROCESSORS.....	73
INDUSTRY OVERVIEW	73
<i>FIGURE 12 A TYPICAL DSP SYSTEM</i>	74
WORLDWIDE DSP MARKET FORECAST	75
<i>TABLE 16 WORLDWIDE DSP MARKET FORECAST, THROUGH 2015</i> <i>(\$ MILLIONS)</i>	76
<i>TABLE 17 GLOBAL DSP MARKET BY REGION, THROUGH 2015 (\$</i> <i>MILLIONS)</i>	76
<i>TABLE 18 GLOBAL DSP MARKET BY VERTICAL, THROUGH 2015 (\$</i> <i>MILLIONS)</i>	77
TRENDS IN DSP MARKET	77
MAJOR PLAYERS IN DSP MARKET.....	78
ANALOG DEVICES.....	78
Related Products.....	79
Recent Developments	79
FREESCALE	80
Related Products.....	80
Recent Developments	81
TEXAS INSTRUMENT (TI)	81
Related Products.....	81
Recent Developments	82
DSP MARKET VENDOR SHARES	83
<i>TABLE 19 DSP VENDORS MARKET SHARE, 2010 (%)</i>	83
<i>FIGURE 13 WORLDWIDE DSP MARKET SHARE, 2010 (%)</i>	83
CHAPTER NINE: RAM.....	84
INDUSTRY OVERVIEW	84
INDUSTRY OVERVIEW (CONTINUED).....	85
SRAM MARKET AND BUSINESS STRATEGY	86
DRAM MARKET AND BUSINESS STRATEGY	86
DRAM MARKET AND BUSINESS ... (CONTINUED)	87
RAM MARKET FORECAST	88

<i>TABLE 20 GLOBAL RAM MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)</i>	88
<i>TABLE 21 GLOBAL RAM MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)</i>	89
<i>TABLE 22 GLOBAL RAM MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)</i>	89
RAM MARKET TRENDS	89
RAM MARKET TRENDS (CONTINUED).....	90
RAM MARKET TRENDS (CONTINUED).....	91
RAM VENDORS MARKET SHARE	92
<i>TABLE 23 RAM VENDORS MARKET SHARE, 2010 (%)</i>	92
<i>FIGURE 14 WORLDWIDE RAM VENDOR MARKET SHARE, 2010 (%)</i>	92
SELECTED VENDOR PROFILES	93
ELPIDA.....	93
Related Products.....	93
DDR3 SDRAM.....	93
DDR2 SDRAM.....	93
Mobile RAM.....	93
GDDR5	94
Recent Developments	94
HYNIX	94
Related Products.....	95
DDR, DDR2, and DDR3 SDRAM	95
Recent Developments	95
MICRON	96
Related Products.....	96
SDRAM.....	96
DR SDRAM	96
DDR2 SDRAM.....	96
DDR3 SDRAM.....	96
RLDRAM	96
Mobile LPDRAM.....	97
Recent Developments	97
POWERCHIP	97
Recent Developments	98
SAMSUNG.....	98
Related Products.....	98
Recent Developments	99
CHAPTER TEN: FLASH MEMORY	100
INDUSTRY OVERVIEW	100
FLASH MEMORY ARCHITECTURE	101
NOR AND NAND FLASH	101
MLC AND SLC NAND.....	102
WORLDWIDE MARKET FORECAST.....	102

<i>TABLE 24 GLOBAL FLASH MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)</i>	103
<i>TABLE 25 GLOBAL FLASH MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)</i>	104
<i>TABLE 26 GLOBAL FLASH MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)</i>	104
FLASH MARKET TRENDS	104
FLASH MARKET TRENDS (CONTINUED).....	105
FLASH MEMORY VENDOR MARKET SHARE (2010)	106
<i>TABLE 27 FLASH MEMORY VENDORS MARKET SHARE, 2010 (%)</i>	106
<i>FIGURE 15 FLASH MEMORY VENDOR MARKET SHARE, 2010 (%)</i>	107
SELECTED VENDOR PROFILES	107
HYNIX	107
Related Products.....	108
Recent Developments	108
MICRON.....	109
Related Products.....	109
Recent Developments	109
Related Products.....	110
NAND Flash.....	110
Toggle DDR NAND Flash.....	110
NOR Flash.....	111
Recent Developments	111
SPANSION, INC.	112
Related Products.....	112
Recent Developments	112
TOSHIBA.....	113
Related Products.....	113
Recent Developments	113
CHAPTER ELEVEN: ASIC.....	114
INDUSTRY OVERVIEW	114
<i>TABLE 28 ASIC, ASSP, AND FPGA TECHNOLOGY COMPARISON</i>	114
<i>TABLE 29 GLOBAL ASIC MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)</i>	115
ASIC TECHNOLOGY EVOLUTION	115
<i>FIGURE 16 ASIC TECHNOLOGY NODES</i>	116
ASIC DESIGN FLOW.....	117
<i>FIGURE 17 TYPICAL STEPS IN ASIC DESIGN CYCLE AND TIMELINE</i>	118
SPECIFICATION	118
DESIGN AND VERIFICATION	119
FIRST SIGN-OFF	119
PROTOTYPING	119
SECOND SIGN-OFF.....	119

PRODUCTION	120
STRUCTURED ASIC.....	120
OVERALL ASIC MARKET BY GEOGRAPHY AND VERTICAL	121
TABLE 30 GLOBAL ASIC MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)	121
TABLE 31 GLOBAL ASIC MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)	122
ASIC MARKET TRENDS.....	122
ASIC MARKET TRENDS (CONTINUED)	123
SELECTED VENDOR PROFILES	124
AVAGO TECHNOLOGIES	124
Related Products.....	124
Recent Developments	124
FUJITSU	125
Related Products.....	125
Recent Developments	126
GLOBAL FOUNDRIES.....	126
Related Products.....	126
Recent Developments	127
IBM	127
Related Products.....	128
Recent Developments	128
CHAPTER TWELVE: PLD.....	129
INDUSTRY OVERVIEW	129
CPLD AND FPGA	129
COMPARISON OF ASIC AND PLD DESIGN FLOW	130
FIGURE 18 TYPICAL PLD DESIGN FLOW.....	131
GLOBAL PLD MARKET	132
TABLE 32 GLOBAL PLD MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)	132
TABLE 33 GLOBAL PLD MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)	133
TABLE 34 GLOBAL PLD MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)	134
PLD MARKET TRENDS	134
PLD VENDOR STRATEGY AND COMPETITION	135
PLD VENDORS MARKET SHARE	136
TABLE 35 PLD VENDORS MARKET SHARE, 2010 (%).....	136
FIGURE 19 WORLDWIDE PLD VENDORS MARKET SHARE, 2010 (%)	137
SELECTED VENDOR PROFILES	137
ALTERA.....	137
Related Products.....	137
Cyclone Series FPGA.....	137
Stratix Series FPGA	138

Hardcopy Structured ASICs.....	138
MAX Series PLD.....	138
Development Tools.....	138
Recent Developments.....	138
LATTICE SEMI.....	139
Related products.....	139
FPGA.....	139
PLD.....	140
Design Software.....	140
Recent Developments.....	140
MICROSEMI.....	140
Related Products.....	141
Low-power FPGAs.....	141
Mixed Signal FPGAs.....	141
Radiation-tolerant FPGAs.....	141
Recent Developments.....	142
XILINX, INC.....	142
Related Products.....	142
Recent Developments.....	143
CHAPTER THIRTEEN: EMBEDDED BOARDS.....	144
EMBEDDED BOARD INDUSTRY OVERVIEW.....	144
POPULAR BOARD STANDARDS.....	145
PC/104 AND PC/104-PLUS.....	145
EBX.....	145
EPIC.....	146
MINI-ITX.....	146
ATCA.....	146
ADVANCEDMC.....	147
MICROTCA.....	147
PCI AND COMPACTPCI.....	147
VME.....	148
GLOBAL MARKET FORECAST.....	148
<i>TABLE 36 GLOBAL BOARD MARKET FORECAST, THROUGH 2015 (\$</i>	
<i>MILLIONS)</i>	149
GLOBAL AND REGIONAL TRENDS FOR EMBEDDED BOARD.....	149
<i>TABLE 37 GLOBAL BOARD MARKET BY REGION, THROUGH 2015 (\$</i>	
<i>MILLIONS)</i>	150
EMBEDDED BOARD END-USE APPLICATION TRENDS.....	150
<i>TABLE 38 GLOBAL BOARD MARKET BY VERTICAL, THROUGH 2015</i>	
<i>(\$ MILLIONS)</i>	150
EMBEDDED BOARD MARKET SEGMENTATION.....	151
<i>TABLE 39 EMBEDDED MARKET SEGMENT GROWTH FORECAST,</i>	
<i>THROUGH 2015 (\$ MILLIONS)</i>	151
EMBEDDED SINGLE-BOARD COMPUTERS.....	151

DAUGHTER CARDS	152
PC/104 MODULES.....	152
MEZZANINE CARDS	152
BLADE SYSTEMS	152
COMPUTERS-ON-MODULES (COMS)	153
EMBEDDED BOARD MARKET TRENDS	153
FORM FACTOR TRENDS.....	153
PC/104 MARKET TRENDS	154
ROLE OF OS	154
BLADE SYSTEMS MARKET TRENDS	155
SELECTED VENDORS PROFILES.....	155
ADLINK TECHNOLOGY, INC	155
Industrial Computing.....	156
Measurement and Automation Product Segment.....	156
DIAMOND SYSTEMS	157
EMERSON EMBEDDED COMPUTING	158
EUROTECH, INC.	158
KONTRON.....	159
MERCURY COMPUTER SYSTEMS	160
RADISYS	160
SKY COMPUTERS, INC.	161
WINSYSTEMS, INC.	161
WinSystems, Inc. (Continued)	162
CHAPTER FOURTEEN: EMBEDDED SOFTWARE.....	163
EMBEDDED SOFTWARE MARKET SEGMENTATION	163
<i>FIGURE 20 SOFTWARE STACK IN A TYPICAL EMBEDDED SYSTEM.....</i>	<i>163</i>
EMBEDDED SOFTWARE ... (CONTINUED)	164
TYPICAL SOFTWARE DEVELOPMENT CYCLE	165
<i>FIGURE 21 TYPICAL EMBEDDED SOFTWARE DEVELOPMENT</i>	
<i>CYCLE.....</i>	<i>165</i>
TRENDS IN EMBEDDED SOFTWARE MARKET.....	166
Software as a Means of Product Differentiation	166
Software Development Becoming Bottleneck in Product	
Development.....	167
Rise of Open Source Software	167
Outsourcing of Embedded Software Development.....	168
Rise of Android	168
Rise of Android (Continued)	169
CHAPTER FIFTEEN: OVERALL EMBEDDED SOFTWARE MARKET	170
<i>TABLE 40 GLOBAL EMBEDDED SOFTWARE MARKET BY</i>	
<i>SEGMENTS, THROUGH 2015 (\$ MILLIONS).....</i>	<i>170</i>
<i>FIGURE 22 GLOBAL MARKET FOR EMBEDDED SOFTWARE BY</i>	
<i>SEGMENTS, 2009-2015 (\$ MILLIONS).....</i>	<i>171</i>

<i>FIGURE 23 GLOBAL MARKET FOR EMBEDDED SOFTWARE BY SEGMENTS, 2010 (%)</i>	171
<i>FIGURE 23 (CONTINUED)</i>	172
MARKET BY REGION	172
<i>TABLE 41 GLOBAL EMBEDDED SOFTWARE MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)</i>	173
<i>FIGURE 24 EMBEDDED SOFTWARE MARKET BY REGION, 2009–2015 (\$ MILLIONS)</i>	173
<i>FIGURE 25 WORLDWIDE EMBEDDED SOFTWARE MARKET BY REGION, 2010 (%)</i>	174
MARKET BY VERTICAL SEGMENTS.....	174
<i>TABLE 42 GLOBAL EMBEDDED SOFTWARE MARKET BY VERTICAL SEGMENTS, THROUGH 2015 (\$ MILLIONS)</i>	175
<i>FIGURE 26 GLOBAL EMBEDDED SOFTWARE MARKET BY VERTICAL SEGMENTS, 2009-2015 (\$ MILLIONS)</i>	175
<i>FIGURE 27 GLOBAL EMBEDDED SOFTWARE MARKET BY VERTICAL SEGMENTS, 2010 (\$ MILLIONS)</i>	176
CHAPTER SIXTEEN: OPERATING SYSTEM (OS)	177
OPERATING SYSTEM OVERVIEW	177
OPERATING SYSTEM OVERVIEW (CONTINUED).....	178
OS- CLASSIFICATION	179
GENERAL PURPOSE OS	179
REAL TIME OPERATING SYSTEM (RTOS).....	179
OS SELECTION PROCESS	180
LICENSING MODELS	181
OVERALL OS MARKET	182
<i>TABLE 43 GLOBAL OS MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)</i>	182
<i>TABLE 44 GLOBAL OS MARKET BY REGION. THROUGH 2015 (\$ MILLIONS)</i>	183
<i>TABLE 45 GLOBAL SOFTWARE TOOLS MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)</i>	183
OS MARKET TRENDS BY VERTICAL	184
LOW- AND MID-END CELL PHONES.....	184
SET-TOP BOX AND DTV	184
PDA/SMART PHONES.....	184
AEROSPACE AND DEFENSE	185
OS VENDORS MARKET SHARE.....	185
<i>TABLE 46 OS VENDORS MARKET SHARE, 2010 (%)</i>	186
<i>FIGURE 28 GLOBAL OS VENDORS MARKET SHARE, 2010 (%)</i>	186
OS KEY VENDORS	187
ENEAA.....	187
Related Products.....	187
Recent Developments	188

EXPRESS LOGIC.....	188
Related Products.....	188
Recent Developments	189
GREEN HILLS SOFTWARE.....	190
Related Products.....	190
Recent Developments	190
MENTOR GRAPHICS	191
Related Products.....	191
Recent Developments	192
MICROSOFT	192
Relevant Products.....	193
Windows Mobile OS	193
Windows CE.....	193
Windows XP Embedded.....	194
Windows Embedded Point of Sale (WEPOS).....	195
Recent Developments	195
QNX	196
Related Products.....	196
Recent Developments	197
SYMBIAN (NOKIA)	197
Related Products.....	198
Recent Developments	198
WINDRIVER (INTEL)	198
Related Products.....	199
Recent Developments	199

CHAPTER SEVENTEEN: SOFTWARE DEVELOPMENT AND TESTING

TOOLS	200
INDUSTRY OVERVIEW	200
INTEGRATED DEVELOPMENT ENVIRONMENT (IDE)	200
COMPILERS AND LINKERS	201
STATIC CODE ANALYZERS.....	201
JTAG DEBUG TOOLS.....	201
IN CIRCUIT EMULATORS (ICE).....	202
GLOBAL MARKET FOR SOFTWARE TOOLS	203
<i>TABLE 47 GLOBAL TOOLS MARKET FORECAST THROUGH 2015 (\$ MILLIONS)</i>	203
<i>TABLE 48 GLOBAL SOFTWARE TOOLS MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)</i>	203
<i>TABLE 49 GLOBAL SOFTWARE TOOLS MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)</i>	204
SELECTED COMPANY PROFILES	204
ARM.....	204
Related Products.....	205
Recent Developments	205

IAR.....	206
Related Products.....	206
C/C++ Compilers and Debuggers.....	206
State Machine Tools.....	207
Debug Probes.....	207
Recent Developments.....	207
KLOCWORKS.....	208
Related Products.....	208
Recent Developments.....	209
LAUTERBACH, INC.....	209
Related Products.....	209
Recent Developments.....	210
WIND RIVER (INTEL).....	210
Related Products.....	211
Recent Developments.....	211
CHAPTER EIGHTEEN: MIDDLEWARE.....	212
MARKET OVERVIEW.....	212
OVERALL MIDDLEWARE GLOBAL MARKET FORECAST.....	212
<i>TABLE 50 GLOBAL MIDDLEWARE MARKET FORECAST, THROUGH</i>	
<i>2015 (\$ MILLIONS)</i>	213
GLOBAL MIDDLEWARE MARKET BY REGION.....	213
<i>TABLE 51 GLOBAL MIDDLEWARE MARKET BY REGION, THROUGH</i>	
<i>2015 (\$ MILLIONS)</i>	213
GLOBAL MIDDLEWARE MARKET BY VERTICAL.....	213
<i>TABLE 52 GLOBAL MIDDLEWARE MARKET BY VERTICAL,</i>	
<i>THROUGH 2015 (\$ MILLIONS)</i>	214
VALUE PROVIDED BY MIDDLEWARE.....	214
TIME TO MARKET.....	214
VALUE-ADDED PROPOSITION.....	214
REDUCE DEVELOPMENT AND PRODUCTION COSTS.....	214
LOWER MAINTENANCE AND OPERATING COSTS.....	215
MIDDLEWARE VENDOR COMPANY PROFILES.....	215
ACCESS.....	215
Related Products.....	215
Recent Developments.....	216
ENEA.....	216
Related Products.....	217
Protocol Stacks.....	217
High-availability Middleware.....	217
Recent Developments.....	217
GREEN HILLS SOFTWARE.....	218
Related Products.....	218
File Systems.....	218
USB Solutions.....	219

Graphics and Video.....	219
Recent Developments	219
WINDRIVER (INTEL)	220
Related Products.....	220
Network Stack.....	220
Security	221
Mobility	221
Wind River Wireless Security	221
Network Management	221
Graphics	222
Recent Developments	222
CHAPTER NINETEEN: EMBEDDED LINUX TOOLS AND OS.....	223
MARKET OVERVIEW	223
MARKET OVERVIEW (CONTINUED)	224
COMMERCIAL EMBEDDED LINUX	225
REAL TIME LINUX.....	226
LINUX OS VENDOR DIFFERENTIATION AND SELECTION.....	227
COMMERCIAL VERSUS NONCOMMERCIAL LINUX TRADE OFF	228
OVERALL LINUX OS AND TOOLS MARKET	229
<i>TABLE 53 GLOBAL LINUX OS AND TOOLS MARKET FORECAST, THROUGH 2015 (\$ MILLIONS)</i>	229
<i>TABLE 54 GLOBAL LINUX OS AND TOOLS MARKET BY REGION, THROUGH 2015 (\$ MILLIONS)</i>	230
<i>TABLE 55 GLOBAL LINUX OS AND TOOLS MARKET BY VERTICAL, THROUGH 2015 (\$ MILLIONS)</i>	230
LINUX TRENDS.....	231
LINUX VENDOR MARKET SHARE.....	231
<i>TABLE 56 LINUX OS AND TOOLS VENDORS MARKET SHARE, 2010 (%)</i>	232
<i>FIGURE 29 WORLDWIDE LINUX OS VENDORS MARKET SHARE, 2010 (%)</i>	232
SELECTED COMPANY PROFILES	233
DENX.....	233
Related Products.....	233
Recent Developments	233
KOAN S.A.S.....	234
Related Products.....	234
Recent Developments	235
LYNEXWORKS.....	235
Related Products.....	235
Recent Developments	236
MONTAVISTA (CAVIUM).....	236
Related Products.....	237

Recent Developments	238
TIMESYS	238
Related Products.....	238
Recent Developments	239
WINDRIVER (INTEL)	240
Related Products.....	240
Wind River Real-Time Core for Linux	241
Recent Developments.....	241
GLOSSARY	242
GLOSSARY	242
GLOSSARY (CONTINUED).....	243
GLOSSARY (CONTINUED).....	244
GLOSSARY (CONTINUED).....	245